Supreme Court, U.S.
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No. _____

In The

Supreme Court of the United States

October Term, 1997

PETER MAIER, P.E.; INTERMOUNTAIN WATER ALLIANCE; ATLANTIC STATES LEGAL FOUNDATION; and KAY HENRY,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; and CAROL BROWNER, Administrator, United States Environmental Protection Agency,

Respondents.

Petition for Writ of Certiorari to the United States Court of Appeals for the Tenth Circuit

PETITION FOR WRIT OF CERTIORARI

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QUESTIONS PRESENTED

1. May a Court supply its own interpretation of an ambiguous statutory provision, which interpretation was not advanced by the agency charged with administering the statute, and which is actually contrary to the agency's prior interpretation of that statutory provision?

2. May the Environmental Protection Agency refuse to consider amending its nation-wide "technology-based" regulations under the Clean Water Act governing pollution discharges from sewage treatment plants, where the agency acknowledges that new technology exists to support adoption of more protective regulations that can be implemented at no greater cost than existing regulations?

LIST OF PARTIES

The names of all parties to the proceedings in the court whose judgment is sought to be reviewed here appear in the caption of the case. There is no parent or subsidiary company of any party.

TABLE OF CONTENTS

Questions Presented.....i

List of Parties.....ii

Table of Authorities.....iv

Opinions Below.....1

Jurisdiction.....1

Statute Involved.....2

Statement of the Case.....3

Reasons for Granting the Writ.....7

I. The Court of Appeals' Decision Directly Conflicts with Supreme Court Precedent Disallowing a Court from Supplying its Own Statutory Interpretation of an Ambiguous Statute Not Advanced by the Administering Agency.....7

II. The Court of Appeals' Decision Directly Conflicts with Supreme Court Precedent Requiring Technology-based Water Pollution Regulations under the Clean Water Act.....10

Conclusion.....14

Appendix

Appendix A: Opinion of the United States Court of Appeals for the Tenth Circuit, Dated May 28, 1997

Appendix B: Petition for Rulemaking Before the Environmental Protection Agency, Dated August 6, 1993

Appendix C: EPA Response to Petition for Rulemaking, Dated August 6, 1993

TABLE OF AUTHORITIES

Cases

Chevron U.S.A. v. Natural Resources Defense Council, 467 U.S. 837 (1984).....7-10

Colorado Environmental Coalition v. Lujan, 803 F.Supp. 364 (D. Colo. 1992).....12 n.5

Environmental Protection Agency v. California ex rel. State Water Resources Control Board, 426 U.S. 200 (1976).....10-13

Franklin Savings Ass'n. v. Director, Office of Thrift Supervision, 934 F.2d 1127, 1137 (10th Cir.), *cert. denied*, 503 U.S. 937 (1992).....12 n.5

Statutes

28 U.S.C. § 1254(1).....1

33 U.S.C. § 1251(a)(1).....2-4, 13

33 U.S.C. § 1311(b).....2, 5, 8 n.3

33 U.S.C. § 1314(d)(1).....2

33 U.S.C. § 1369.....5

Other Authorities

40 C.F.R. Part 133.....3, 8 n.3

41 Fed. Reg. 37,222 (1976).....8 n.3

48 Fed. Reg. 52,273 (Nov. 16, 1983).....4

S. Rep. 92-414, at 43, *reprinted in* 1972 U.S.C.C.A.N. 3668, 3710.....11 n.4

PETITION FOR WRIT OF CERTIORARI

Petitioners Peter Maier, P.E., Intermountain Water Alliance, Atlantic States Legal Foundation, and Kay Henry (herein collectively "Maier") respectfully petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Tenth Circuit, entered May 28, 1997 .

OPINIONS BELOW

The opinion of the Court of Appeals is published at 114 F.3d 1032 (10th Cir. 1997) and is reproduced in the Appendix to this petition at Appendix A. This was an original action in the Court of Appeals. The underlying administrative petition by Maier to the respondents United States Environmental Protection Agency and Carol Browner, Administrator, United States Environmental Protection Agency (herein collectively "EPA"), is reproduced at Appendix B. The response by the EPA to the administrative petition is reproduced at Appendix C.

JURISDICTION

The Court of Appeals entered its judgment on May 28, 1997. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254(1).

STATUTE INVOLVED

This case concerns the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, of which the pertinent sections are set out below:

> § 1251(a)(1): It is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985.
>
> § 1311(b): In order to carry out the objective of this chapter there shall be achieved-
>
> * * *
>
> (1)(B) for publicly owned treatment works . . . effluent limitations based upon secondary treatment as defined by the Administrator pursuant to section 1314(d)(1) of this title.
>
> § 1314(d)(1): The Administrator . . . shall publish within sixty days after October 18, 1972 (and from time to time thereafter) information, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants, on the degree of effluent reduction attainable through the application of secondary treatment.

STATEMENT OF THE CASE

Petitioner Peter Maier, P.E. and other parties submitted a petition for rulemaking before the EPA on August 6, 1993, to amend the "secondary treatment" regulations for publicly owned treatment works ("POTWs"), 40 C.F.R. Part 133. App. B. POTWs are the sewage treatment plants in operation in every community across the United States, and they are designed primarily to meet the permit limitations written to conform with the regulations at issue here. "Secondary treatment" "refers to a process of physical and biological treatment of wastewater to remove pollutants which deplete the water's oxygen content and increase its acidity." App. A at 4 n.2, *see also id.* at 25-27.

Specifically, Maier petitioned the EPA to initiate a rulemaking to consider including controls on nitrogenous biochemical oxygen demand ("NOD" or "NBOD") and nutrients (phosphorous, nitrates, ammonia) in its secondary treatment regulations, which currently only control carbonaceous BOD ("CBOD"), suspended solids, and pH. *See* App. A at 5-9; App. B. NOD and nutrients result from urine and protein wastes, and often comprise the largest components of raw sewage flowing into POTWs. App. B at 9, 12. The petition, based largely on EPA reports issued since the last time the secondary treatment regulations were amended in 1983-84, showed that newly-proven technologies exist such that these regulations could be adopted without imposing any additional treatment costs on municipalities. App. A at 8; App. B at 16-18.

The Clean Water Act ("CWA") was passed by Congress in 1972 with the "national goal that the discharge of pollutants into the navigable waters be eliminated by

1985." 33 U.S.C. § 1251(a)(1). Although this goal has not yet been achieved, it remains the goal of the CWA. Congress sought to achieve this goal by a new means compared with previous water pollution statutes: rather than only require pollution controls proven to abate identified water-quality problems, Congress instead required pollution controls that were shown to be technologically and economically feasible, to work towards the goal of the eventual elimination of water pollution. App. A at 46-47.

In 1983, the date of the last proposed rule to amend the secondary treatment regulations, it was not proven that NOD and nutrients could be removed cost-effectively by POTWs, and so were not included in the secondary treatment regulations. App. A at 27; 48 Fed. Reg. 52,273 (Nov. 16, 1983). However, new information has developed since 1983, as documented in published EPA reports, showing that technologies now exist for POTWs that can control NOD and nutrients at no more cost than treating CBOD alone. App. B at 16-18. Maier's petition for rulemaking was based on these new reports.[1]

The EPA responded to the petition, denying it, on February 6, 1995. App. C. In that denial the EPA refused to commence a rulemaking to determine whether NOD and nutrients should be regulated, and if so, in what amounts.

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[1]. The rulemaking petition also suggested that the five-day values for BOD be changed to a formula that represents the ultimate value of BOD, a formula earlier acknowledged by the EPA to be appropriate. App. B at 15.

Id. The EPA did not seriously[2] deny that controls on NOD and nutrients were technologically and economically feasible, but asserted that as a legal matter, it need not consider such controls, because: 1) Congress did not intend NOD and nutrients to be controlled as secondary treatment; and 2) it was allowed to address them solely on a case-by-case basis, based on local water quality standards, anywhere NOD and nutrients were deemed a water quality problem, rather than by the nation-wide, technology-based, secondary treatment regulations.

Pursuant to the judicial review provision of the CWA, 33 U.S.C. § 1369, Maier filed a petition for review of the EPA's denial of the petition for rulemaking on June 2, 1995 in the United States Court of Appeals for the Tenth Circuit. On May 28, 1997, by a 2 to 1 vote, the Court of Appeals affirmed the EPA's denial. App. A. The Court rejected the EPA's argument that Congress did not intend the secondary treatment regulations to include NOD and nutrients. App. A at 26-27. Instead, the Court's decision rested on a different two-part, inter-dependent holding. The first part was based on a statutory interpretation of 33 U.S.C. § 1311(b)(1)(B) not advanced by the EPA, which was that even if "secondary treatment" is defined by the EPA to include NOD and nutrients, the

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[2] The EPA had one sentence in its response to the rulemaking petition asserting that the technologies presented were only applicable to "relatively small municipal treatment facilities due to greater land requirements." App. B at 25. However, this single-sentence assertion was "unsubstantiated," and the EPA did not otherwise disavow the accuracy of its own reports. *See* App. A at 51-52 n.6.

EPA need not promulgate regulations requiring POTWs to meet this level of secondary treatment, but could rely on "other factors" in promulgating its secondary treatment regulations. App. A at 27-31.

The second part of the Court's holding, having found that the EPA could rely on "other factors," was that it agreed with the EPA's argument that it could choose to address NOD and nutrients on a permit-by-permit basis, rather than including them in the nation-wide secondary treatment regulations, ignoring technological capability and instead relying only upon water quality standards for these pollutants. App. A at 31-34.

The dissent disagreed with both parts of the majority's decision. App. A at 38-52. It took issue with the first part because: a) the majority imposed a statutory construction not advanced by the EPA; and b) that statutory construction was actually contrary to the EPA's own construction, as evidenced by past rulemakings. App. A at 38-43. The dissent also disagreed with the second part of the majority's decision, that the EPA could rely solely on water quality-based permit-by-permit limitations for NOD and nutrients, where Maier's petition showed, without any contrary evidence by the EPA, that cost-effective technologies now exists to support secondary treatment regulations for those pollutants. App A. at 45-52.

REASONS FOR GRANTING THE WRIT

I. THE COURT OF APPEALS' DECISION DIRECTLY CONFLICTS WITH SUPREME COURT PRECEDENT DISALLOWING A COURT FROM SUPPLYING ITS OWN STATUTORY INTERPRETATION OF AN AMBIGUOUS STATUTE NOT ADVANCED BY THE ADMINISTERING AGENCY

The Court of Appeals' decision is in direct conflict with *Chevron U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837 (1984) ("*Chevron*"), and so this petition should be granted.

In *Chevron*, the Court stated the scope of review in a case such as this:

> When a court reviews an agency's construction of the statute it administers, it is confronted with two questions. First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress. *If, however, the court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction of the statute, as would be necessary in the absence of an administrative interpretation.* Rather, if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the *agency's* answer is based on a permissible construction of the statute.

467 U.S. at 842-43 (footnotes omitted) (emphasis added).

The Court of Appeals, however, did not follow this principle: it supplied an interpretation of the CWA not advanced by the EPA,[3] asserting that it must do so under *Chevron* because "we may not avoid construing the statute to the extent necessary to determine that the agency's regulations are not 'manifestly contrary to statute.'" App. A at 30 n.17, citing *Chevron*, 467 U.S. at 844. However, this is not the rule pronounced in *Chevron*. *Chevron* states that a court must defer to agency interpretations of ambiguous statutes "*unless* they are arbitrary, capricious, or manifestly contrary to statute"; it does not say, as the Court of Appeals did, that a court must supply its own interpretation of a statute, not advanced by an agency, which it feels is necessary to prevent the Court from

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[3]. The interpretation of the CWA which the majority announced was that the term "based upon" in 33 U.S.C. § 1311(b)(1)(B) meant that even if "secondary treatment" were now properly defined to include NOD and nutrients (which it believed was true- *see* App. A at 26-27), "the statute does not on its face require that the generally-applicable effluent limitations address *all* pollutants that might be reduced by secondary treatment." App. A at 29 (emphasis in original).

As the dissent points out, not only was this statutory interpretation not advanced by the EPA in this case, it is contrary to how the EPA itself has interpreted it over the years. App. A at 41-43 (citing, *inter alia*, 41 Fed. Reg. 37,222 (1976): "Secondary treatment (as defined in 40 C.F.R. 133) is the minimum level of treatment required for all publicly-owned treatment works.").

finding the agency's interpretation as embodied in its regulations "manifestly contrary to statute." *See* 467 U.S. at 844 (emphasis added).

The dissent pointed out this legal error, finding that nowhere in the EPA's denial of the rulemaking petition, its brief, or in any material in the record did the EPA make the argument or interpret the statutory provision as the majority did. App. A at 41. The majority responded to this objection, not by answering that the EPA did in fact make the argument (which it could not because the EPA did not), but by supporting its decision to supply its own statutory interpretation by attempting to distinguish between the "*source of* agency discretion" and the "*basis for* the agency's *exercise of* its discretion." App. A at 30 n.17 (emphasis in original). Through this cryptic explanation, the Court appeared to state that once it feels the agency's decision was ultimately reasonable, it could supply its own statutory interpretation to support that ultimate decision, even though it was not advanced by the agency. However, this standard violates the *Chevron* standard.

The danger of such a departure is shown by this very case: not only has the EPA *not advanced* the statutory interpretation announced by the majority opinion, but as the dissent points out, the record shows that the EPA actually *disagrees* with the interpretation announced by the Court. *See* App. A at 41-43. Thus, rather than the result intended by *Chevron* whereby an agency entrusted with implementing a statute is allowed to provide the necessary interpretation of an ambiguous provision, the Court of Appeals' decision allows the courts to usurp this power, and actually announce interpretations with which the entrusted agencies themselves do not agree. This violates the core principle of *Chevron*.

Thus, the Court of Appeals announced a legal standard that directly conflicts with the standard announced by this Court in *Chevron*, and so the Court should grant the writ.

II. THE COURT OF APPEALS' DECISION DIRECTLY CONFLICTS WITH SUPREME COURT PRECEDENT REQUIRING TECHNOLOGY-BASED WATER POLLUTION REGULATIONS UNDER THE CLEAN WATER ACT

The decision below is in direct conflict with this Court's decision in *Environmental Protection Agency v. California ex rel. State Water Resources Control Board*, 426 U.S. 200 (1976) ("*EPA v. California*").

In *EPA v. California*, the Court held that the CWA requires the EPA to issue nation-wide effluent limitations such as those at issue here on the basis of what is technologically and economically feasible, without regard to water quality-based considerations:

> [A] discharger's performance is now measured against strict technology-based effluent limitations-specified levels of treatment- to which it must conform, rather than against limitations derived from water quality standards to which it and other polluters must collectively conform.

426 U.S. at 204-205 (footnotes omitted).[4]

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[4]. Footnote 11 noted the technological standards that apply to discharging sources other than POTWs. As

In contrast, the majority opinion of the Court of Appeals in this case held that the EPA could ignore technologically and economically feasible effluent limitations, based on its assertion that water quality concerns did not warrant adopting such limitations:

> The agency's decision to control NOD and nutrients by permit [on a case-by-case basis rather than by the nation-wide secondary treatment standards] is supported by two other factual predicates that lie within its expertise in administering the statute: first, the impact of NOD and nutrients on water quality is highly variable with the characteristics of the receiving body of water; second, control of NOD by permit adequately protects water quality where necessary.

App. A at 32-33.[5]

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already explained, the standard for

> publicly owned sewage treatment works is based upon secondary treatment. It is not based upon ambient water quality considerations.

S. Rep. 92-414, at 43, *reprinted in* 1972 U.S.C.C.A.N. 3668, 3710.

[5]. The Court refused to consider Maier's appended "material" showing that in fact, NOD and nutrient pollution from POTWs is a major water pollution problem. App. A at 33 n.18. The material was an "EPA Fact Sheet" summarizing its "National Water Quality Inventory 1992 Report to Congress," showing that POTWs are a primary source of existing pollution, and further that NOD and nutrients were a primary component of that existing

This is a direct conflict with *EPA v. California*, and warrants granting the writ. As the dissenting opinion stated:

> In allowing the substitution of quality-based controls for generally-applicable, technology-based effluent limitations, the majority allows the EPA to return clean water regulation to the pre-1972 era.

App. A at 38. As this Court has explained, such pre-CWA regulations premised on water-quality standards were the very methods deemed ineffectual in addressing water pollution, and which were rejected as the primary vehicle for regulating water pollution under the CWA. *EPA v. California* at 203-204.

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pollution. It was not submitted with Maier's petition for rulemaking because such considerations are irrelevant to setting a technology-based standard; it was submitted with Maier's reply brief "for background information [and] for determining whether the agency considered all relevant factors including evidence contrary to the agency's position." *Colorado Environmental Coalition v. Lujan*, 803 F.Supp. 364, 370 (D. Colo. 1992), citing *Franklin Savings Ass'n. v. Director, Office of Thrift Supervision*, 934 F.2d 1127, 1137 (10th Cir.), *cert. denied*, 503 U.S. 937 (1992) (allowing party to supplement the administrative record). The Court of Appeals' reliance on the EPA's assertion that there is no water quality problem caused by NOD and nutrient pollution from POTWs is misplaced, since the EPA's own report proves otherwise.

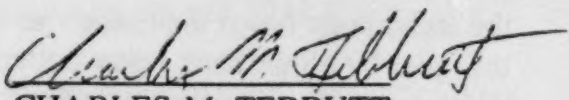
Further, the rejection by the majority opinion of the technology-based approach flatly contradicts the goal of the CWA, as quoted in *EPA v. California*, that "'the discharge of pollutants into the navigable waters be *eliminated* by 1985.'" 426 U.S. at 203, quoting 33 U.S.C. § 1251(a)(1) (emphasis was Court's). As *EPA v. California* explained, the technology-based approach was intended to effectuate this goal by eliminating water pollution whenever technologically and economically feasible, without regard to water quality concerns, in contrast to the failed approaches of the past that relied primarily on the water quality approach. 426 U.S. at 203-08. Without the technology-based approach of the CWA, the discharge of water pollution from sewage treatment plants will never be eliminated. Rather, pollution will continue to be discharged if it can not be scientifically proven to cause an identified water quality problem. While such a result might appear logical in theory, it was an approach rejected by the CWA as being unworkable in practice, and does not result in the eventual elimination of water pollution. *Id.* at 204.

Maier presented evidence in his petition for rulemaking, uncontroverted by the EPA, that NOD and nutrients can be controlled at no greater cost than not controlling these pollutants. *See* App. A at 8, 51-52 n.6. The Court of Appeals' decision holding that the EPA may refuse to consider controlling these pollutants through its secondary treatment regulations, on the basis of water-quality considerations, is in direct conflict with *EPA v. California*, and so the Court should grant the writ.

CONCLUSION

For the reasons stated, the petition for a writ of certiorari should be granted.

Respectfully submitted,



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APPENDIX A - OPINION OF THE UNITED STATES COURT OF APPEALS FOR THE TENTH CIRCUIT DATED MAY 28, 1997

PUBLISH

UNITED STATES COURT OF APPEALS
TENTH CIRCUIT

PETER MAIER, P.E.; INTERMOUNTAIN WATER ALLIANCE; ATLANTIC STATES LEGAL FOUNDATION; and KAY HENRY,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY; CAROL BROWNER, Administrator, United States Environmental Protection Agency,

Respondents.

No. 95-9525.

APPEAL FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
(D.J. No. 90-5-1-7-1299)

Filed May 28, 1997.

Before SEYMOUR, Chief Judge, ALARCON, and LUCERO, Circuit Judges. The Honorable Arthur L. Alarcon, Senior United States Circuit Judge for the Ninth Circuit, sitting by designation.

SEYMOUR, Chief Judge.

Appellants Peter Maier, the Intermountain Water Alliance, the Atlantic States Legal Foundation, the Utah Wilderness Association, and Kay Henry[1] petitioned the Environmental Protection Agency (EPA) to initiate rulemaking under the Clean Water Act (CWA), 33 U.S.C. §§ 1251-1387. Mr. Maier contended that recent developments in municipal wastewater technology have rendered the EPA's regulations for secondary treatment inadequate, and therefore the EPA must promulgate new standards. The EPA denied the petition, and Mr. Maier appealed to this court. We affirm.

I.

A.

We start with an overview of the relevant statutory scheme. The CWA aims "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" by reducing and eventually eliminating the discharge of pollutants. 33 U.S.C. § 1251(a), (a)(1). "[T]he basic structure of the [CWA] ... translates Congress' broad goal of eliminating 'the discharge of pollutants into the navigable waters' into specific requirements that must be met by

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[1] The Utah Wilderness Association was dismissed from this appeal. For simplicity's sake, we shall refer only to Mr. Maier as petitioner.

individual point sources." EPA v. National Crushed Stone Ass'n, 449 U.S. 64, 69 (1980) (quoting 33 U.S.C. § 1251(a)(1)) (citations omitted). A "point source" is defined as "any discernible, confined and discrete conveyance ... from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). The CWA prohibits the discharge of any pollutant from a point source unless that discharge complies with the CWA's requirements. 33 U.S.C. § 1311(a). Compliance can be achieved by obtaining a National Pollutant Discharge Elimination System (NPDES) permit, pursuant to 33 U.S.C. § 1342, which establishes technology-based controls and ensures compliance with state or federal water quality standards. 33 U.S.C. § 1311(b)(1)(C). These permits generally contain quantitative limits on the amounts of specified pollutants that may be discharged. See generally Oklahoma v. EPA, 908 F.2d 595, 597-98 (10th Cir. 1990), rev'd on other grounds sub nom., Arkansas v. Oklahoma, 503 U.S. 91 (1992).

The CWA mandates varying standards of technology-based treatment as the minimum requirement for different categories of point sources. 33 U.S.C. §§ 1311, 1314. Under section 1311, "effluent limitations for point sources, other than publicly owned treatment works [POTWs] ... require the application of the best practicable control technology currently available as defined by the Administrator." Id. § 1311(b)(1)(A). By contrast, the same section requires "for publicly owned treatment works ... effluent limitations based upon secondary

treatment."[2] Id. § 1311(b)(1)(B). The EPA may supplement the minimum requirements by using individual permits to impose "any more stringent limitation ... necessary to meet water quality standards." Id. § 1311(b)(1)(C). When Congress first enacted these provisions, it intended to phase in a requirement that publicly owned treatment works utilize "best practicable waste treatment technology," a stricter standard than secondary treatment. 33 U.S.C. § 1311(b)(2)(B) (1973); see also S.REP. NO. 92-414, at 43 (1972), reprinted in 1972 U.S.C.C.A.N. 3668, 3709 ("Publicly-owned treatment systems must meet the secondary treatment requirement of Phase I and, in Phase II, the mandate requires the best practicable treatment...."). In 1981, however, Congress repealed this general requirement and limited the stricter standard to federally-funded POTWs. Municipal Wastewater Treatment Construction Grant Amendments of 1981, Pub.L. No. 97-117, § 21(b), 95 Stat. 1623, 1632 (1981).

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[2] Secondary treatment generally refers to a process of physical and biological treatment of wastewater to remove pollutants which deplete the water's oxygen content and increase its acidity. See generally City of Sarasota v. EPA, 813 F.2d 1106, 1108 n. 7 (11th Cir. 1987); Natural Resources Defense Council, Inc. v. EPA, 790 F.2d 289, 293 n. 2 (3d Cir. 1986).

B.

Secondary treatment, which is the basic requirement for all POTWs, is principally concerned with removing biological pollutants which affect the oxygen content of wastewater. Healthy waters contain dissolved oxygen upon which flora and fauna rely, but biological pollutants "demand" and consume this oxygen. The rate at which dissolved oxygen is consumed is measured by a parameter called "biochemical oxygen demand" (BOD). BOD actually measures the effect of two components of oxygen depletion which, with proper testing, can be disaggregated: CBOD and NOD.[3] The EPA's regulations for standard secondary treatment have always focused on BOD, and

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[3] Carbonaceous biochemical oxygen demand (CBOD) quantifies "the amount of oxygen consumed by various microorganisms in metabolizing organic (carbon) matter in the wastewater," while nitrogenous biochemical oxygen demand (NOD) measures "the oxygen consumed by other types of bacteria ... in converting ammonia to nitrite and then to nitrate, a process known as nitrification." Secondary Treatment Information, 48 Fed.Reg. 52,272, 52,274 (1983) (proposed Nov. 16, 1983). NOD can also be referred to as NBOD, as Mr. Maier does.

"Nutrients" are related to NOD, and refer to materials upon which certain bacteria feed. Oxygen is consumed when these bacteria respire, or when they die and other organisms use oxygen to consume them.

in particular on control of CBOD.[4]

Initially, the EPA required testing for BOD by a standard five-day test of overall BOD levels, the so-called BOD5 test. See rec. at 121-22. But the EPA became concerned that the BOD5 test produced erroneous indications of effluent quality. Secondary treatment with existing technology[5] under some operating conditions could lead to increased nitrification (NOD), and inflated BOD5 values, despite producing effluent of better quality than

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[4] Controlling CBOD has been the main goal of secondary municipal wastewater treatment both because CBOD is usually a much greater problem than NOD and because the development of technology to effectively address high levels of NOD has lagged behind that used to reduce CBOD. Secondary Treatment Information, 48 Fed.Reg. 52,272, 52,275 (1983) (proposed Nov. 16, 1983).

More than a decade ago, scientific commentators speculated as to whether NOD was meant to be controlled as a component of BOD. See rec. at 43 ("Although significant nitrification can occur in the BOD sub5 test for secondary effluents, much debate centers on whether the 30-mg/L BOD sub5 standard, as defined by EPA, was intended to include only carbonaceous oxidation, or also any nitrogenous oxidation that might be exerted in the BOD sub5 test.").

[5] Standard secondary treatment did not include controls on NOD.

facilities with lower BOD5. Id.; Secondary Treatment Information, 48 Fed.Reg. 52,272, 52,275-6. In a 1984 rulemaking, the EPA addressed the problem by revising its regulations to allow the permitting authority to require facilities to employ a more specific measure of CBOD rather than the general test for BOD. See Secondary Treatment Regulation, 49 Fed.Reg. 36,986, 36,988-90, 36,998-99 (1984) (to be codified at 40 C.F.R. pt. 133). In effect, EPA recognized that NOD can constitute a significant component of BOD levels, but concluded that measuring NOD in some cases might distort rather than enhance accurate assessment of effluent quality.

During this rulemaking, commenting parties, including Mr. Maier, suggested that secondary treatment standards ought to directly address NOD or ultimate BOD.[6] See id. at 36,999; rec. at 297. The EPA concluded, however, that NOD levels were

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[6] CBOD levels tend to rise sharply and then plateau, while NOD levels increase at a slower rate. As a result, early testing for BOD (e.g., after five days) will accurately assess CBOD but will fail to measure the levels to which NOD will eventually rise. This rise in NOD would be captured by the measurement of ultimate BOD. This disparity has apparently been recognized for several decades, see rec. at 21, 51, but Mr. Maier suggests it was ignored when EPA promulgated regulations under the CWA, see id. at 8; see also id. at 244.

quite variable and were therefore inappropriate as a criterion for generally-applicable standards. The EPA maintained that NOD would be better dealt with on a case-by-case basis in NPDES permitting. Secondary Treatment Regulation, 49 Fed.Reg. at 36,999; rec. at 297-98. The EPA therefore characterized NOD controls as a form of "advance treatment" to be imposed by permit where necessary. The EPA also noted that total impact on dissolved oxygen level (ultimate BOD) is to be considered in the NPDES permitting process. Secondary Treatment Regulation, 49 Fed.Reg. at 36,999. The EPA's 1984 rulemaking was not appealed to the federal courts. Thus, current regulations for secondary treatment do not establish standards for NOD, although an individual facility's NPDES permit may well impose requirements for NOD.

In 1993, Mr. Maier filed a petition requesting the EPA to initiate rulemaking to set parameters for NOD and ultimate BOD as part of its secondary treatment regulations. Mr. Maier argued that the existing regulations, setting parameters only for CBOD and BOD5, were inadequate because new secondary treatment technology made it feasible and cost-effective to control both CBOD and NOD. The EPA did not controvert that controlling NOD was now feasible and cost-effective for some (but not all) POTWs, but emphasized that the impact of NOD is highly variable and dependent upon such factors as temperature and rate of flow of the receiving water body. In the EPA's view, this variability continues to

justify its regulatory decision to control CBOD with a generally- applicable regulation, but to control NOD on a case-by-case basis through the permitting process. Consequently, the EPA denied Mr. Maier's petition. Mr. Maier filed the instant petition for review in this Court pursuant to 33 U.S.C. § 1369(b)(1).

II.

We first determine whether we have jurisdiction. Although both parties agree that we have jurisdiction, "no action of the parties can confer subject-matter jurisdiction upon a federal court." Insurance Corp. of Ireland, Ltd. v. Compagnie des Bauxites de Guinee, 456 U.S. 694, 702 (1982). We have an independent duty to examine our own jurisdiction. Lopez v. Behles, 14 F.3d 1497, 1499 (10th Cir.), cert. denied, 513 U.S. 818 (1994).

The CWA establishes a bifurcated system of judicial review. Section 1365 "confers jurisdiction on the federal district courts, not courts of appeal, to review any action 'where there is alleged a failure of the Administrator to perform any act or duty under this Act which is not discretionary with the Administrator.' " Trustees for Alaska v. EPA, 749 F.2d 549, 558 (9th Cir. 1984) (quoting 33 U.S.C. § 1365(a)(2)). Section 1369 of the CWA provides that "[r]eview of the Administrator's action ... (E) in approving or promulgating any effluent limitation or other limitation under section 1311, 1312, or 1316 of this title ... may be had by any interested

person in the Circuit Court of Appeals of the United States." 33 U.S.C. § 1369(b)(1).[7] The jurisdictional grant in section 1369 is exclusive. American Petroleum Inst. v. Train, 526 F.2d 1343, 1344 (10th Cir. 1975). We must determine whether the EPA's denial of Maier's petition to institute rulemaking constitutes an "action ... in approving or promulgating any effluent limitation or other limitation," and thus falls within the ambit of section 1369(b)(1).

The District of Columbia Circuit dealt with a similar problem in Oljato Chapter of Navajo Tribe v. Train, 515 F.2d 654 (D.C.Cir. 1975), which interpreted jurisdictional provisions of the Clean Air Act (CAA) in the context of the EPA's refusal to revise previously promulgated standards for certain power plants. As in the CWA, the CAA contained one section permitting citizen suits to be brought in federal district court, id. at 657-58 n. 4 (citing CAA § 304, 42 U.S.C.A. § 1857h-2(a) & (b) (1970)), and another granting jurisdiction to the courts of appeal to "review of action of the Administrator in promulgating" standards of performance, id. at 657 n. 3 (quoting CAA § 307(b), 42 U.S.C.A. § 1857h-5(b) (1975 pocket part)). The petitioners in Oljato Chapter argued that an EPA standard had been rendered obsolete by changes in technology, and that the Administrator's failure to

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[7] Section 1369 codifies Section 509 of the Federal Water Pollution Contrcl Act (Clean Water Act) of 1972.

revise the rule "constituted a failure to perform a nondiscretionary duty, thereby conferring District Court jurisdiction." Id. at 658. The court rejected petitioners' attempts to distinguish "between judicial review of an original rule and review of a subsequent refusal to modify or reverse that rule," noting that

> [w]hile we have no difficulty in making the suggested distinction, we conclude that Congress intended all review related to the continuing validity of standards of performance to be included within the exclusive scope of [the section providing for appellate review]; that this action is premised upon the Administrator's refusal to revise the standard is of no jurisdictional import.

Id. at 659-60. Oljato Chapter relied both on the CAA's legislative history, and on the fact that

> [s]ince a revision by the Administrator is the ultimate goal of a new information appeal, it makes little sense to suggest that this court is stripped of its ... jurisdiction whenever a party attempts to avoid litigation by first asking the Administrator voluntarily to make the same revision a successful ... petition would require.

Id. at 660.

As was the case in Oljato Chapter, the legislative history of the CWA speaks directly to the case at hand:

> The Committee recognizes that it would not be in the public interest to measure for all time the adequacy of a promulgation of any standard requirement or regulation by the information available at the time of such promulgation. In the area of protection of public health and environmental quality, it is clear that new information will be developed and that such information may dictate a revision or modification of any promulgated standard, requirement, or regulation established under the act. The judicial review section, therefore, provides that any person may challenge any requirement after the date of promulgation whenever it is alleged that significant new information has become available.

S.REP. NO. 92-414, at 85 (1972), reprinted in 1972 U.S.C.C.A.N. 3668, 3751. Congress plainly intended that the Administrator's refusal to institute rulemaking in the face of new information could be reviewed directly in a circuit court.

Section 1369's language about an Administrator's "action ... in approving or promulgating any ... limitation" arguably does not apply to the Administrator's refusal to promulgate a rule in the first instance. We agree with the court in Oljato Chapter,

however, that a challenge to the refusal to revise a rule in the face of new information is more akin to a challenge to the existing rule than a challenge to the refusal to promulgate a new rule.[8] Because Mr. Maier is essentially challenging the sufficiency of the EPA's secondary treatment regulation, we have no difficulty construing this as a challenge to an "action in approving or

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[8] We note that two courts have eschewed jurisdiction under section 1369; however, neither case involved the continuing validity of a rule in the face of new information. In Bethlehem Steel Corp. v. EPA, 782 F.2d 645, 656 (7th Cir. 1986), the remedy sought was "not to rescind or modify" as a result of new information, but rather "to conduct a new, follow-on rulemaking proceeding ... distinct from that which [was] under review." Likewise, in Natural Resources Defense Council, Inc. v. Train, 519 F.2d 287, 291 (D.C.Cir. 1975), review was sought for "the omission of certain substances" and "[u]nless a substance is listed no standard or prohibition reviewable under section [1369] will ever be promulgated." We also note that review was not possible because neither case had a complete administrative record. Bethlehem Steel, 782 F.2d at 655-56 (review "will require the compilation of a new administrative record"); Natural Resources Defense Council, Inc. v. Train, 519 F.2d at 291 ("[T]he Administrator had not filed the entire administrative record with the court.").

promulgating" under section 1369. Where petitioners' challenge is to the substance of a regulation that the agency has already promulgated, exclusive jurisdiction in the court of appeals may not be evaded merely by styling the claim as one for failure to revise. Cf. DAVID P. CURRIE, AIR POLLUTION: FEDERAL LAW AND ANALYSIS § 9.10, at 9-31 (1981) ("In short, allegations that the Administrator has failed to take action required by statute should not be permitted to circumvent the plain statutory command that judicial review of decisions respecting implementation plans and other regulations is to be in the courts of appeals...."). "Absent a far clearer expression of congressional intent, we are unwilling to read the CWA as creating such a seemingly irrational bifurcated system." Crown Simpson Pulp Co. v. Costle, 445 U.S. 193, 196-97 (1980) (rejecting attempt to distinguish challenge to EPA veto of a state permit from a challenge to EPA issuance of a permit).

Moreover, if the EPA had responded to Mr. Maier's petition by promulgating a revised rule, exclusive jurisdiction for review would lie in the Court of Appeals. The fact that the EPA declined to act does not deprive us of jurisdiction, for we have exclusive jurisdiction over "petitions to compel final agency action which would only be reviewable in the United States Courts of Appeal." See Environmental Defense Fund v. NRC, 902

F.2d 785, 786 (10th Cir. 1990).[9] This rule ensures that an appellate court will review the Administrator's decision whether the ultimate challenge is to a failure to revise or to a decision to revise.[10] Because exclusive jurisdiction to review the substance of regulations finally promulgated by the EPA lies with the Courts of Appeals, we have jurisdiction to compel revisory rulemaking unless the agency's failure falls within that class of nondiscretionary duties for which jurisdiction has been granted to the district court.

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[9] Although the statutory scheme in Environmental Defense Fund v. NRC did not contain a bifurcated system of judicial review, that fact is irrelevant. The CWA confers jurisdiction on the district courts only for the failure to perform non-discretionary duties. Where the alleged duty is discretionary, as here, the courts of appeals have jurisdiction.

[10] Prudential concerns are not to the contrary, for "[u]nlike other actions in which the district court serves the important functions of developing a complete record and 'defining and focusing the issues,' in many appeals of administrative actions, the agency already has fulfilled those functions and there is no practical reason to submit the issues to two-tiered judicial review." 2 STEVEN ALAN CHILDRESS & MARTHA S. DAVIS, FEDERAL STANDARDS OF REVIEW § 14.03, at 14-19 (2d ed. 1992) (citation omitted).

This is not a case which could have been brought in district court as a citizen's suit under section 1365. Such a suit may lie only for failure to perform a nondiscretionary duty. 33 U.S.C. § 1365. The instant case is unlike others in which circuit courts have declined to find section 1369 jurisdiction in the face of the EPA's refusal to promulgate regulations at all, or its failure to do so by a date certain set by law. For example, in Trustees for Alaska the Ninth Circuit considered a claim that the EPA had totally failed to promulgate specific regulations for the placer mining industry notwithstanding a requirement from Congress to do so, and was instead setting effluent limitations in individual NPDES permits. Trustees for Alaska, 749 F.2d at 558. The court determined that this claim was "framed in terms of the EPA's failure to comply with a nondiscretionary duty to promulgate industry-wide rules," id., and was therefore required to be brought in district court under section 1365, id. at 558-59. See also Armco, Inc. v. EPA, 869 F.2d 975, 981-82 (6th Cir. 1989) (disclaiming jurisdiction where EPA had refused to perform nondiscretionary responsibility to propose comprehensive sludge management regulations); Pennsylvania Dep't of Envtl. Resources v. EPA, 618 F.2d 991, 995 (3d Cir. 1980) (declining section 1369 jurisdiction over suits to compel EPA to perform nondiscretionary duty to promulgate new source performance standards applicable to post-mining discharges). In these cases, the EPA had failed to issue the disputed regulations at all. In the

instant case, the EPA has both issued and revised its regulations, but Mr. Maier contends it has abused its discretion by declining to initiate rulemaking again in light of new information. Both parties agree that the timing of any revision is discretionary.[11] Mr. Maier does not contend the EPA has failed to comply with a nondiscretionary duty, and thus a district court could not exercise jurisdiction over his claim under section 1365.[12] We therefore hold that we have jurisdiction over the instant case under section 1369.

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[11] We note the dicta in Oljato Chapter that a duty under the CAA to revise regulations "from time to time" is discretionary was rendered obsolete by statutory revision imposing a mandatory duty to review regulatcns every five years. See Environmental Defense Fund v. Thomas, 870 F.2d 892, 896-97 (2d Cir. 1989).

[12] As the court in Oljato Chapter noted, the limited jurisdiction granted to the district court would be rendered boundless if an abuse of discretion were considered to be a "failure to perform a nondiscretionary act." 515 F.2d at 662 (emphasis added).

III.

A.

We review an agency's refusal to initiate revisory rulemaking to determine if the agency's refusal was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); see Oklahoma v. EPA, 908 F.2d 595, 598 (10th Cir. 1990), rev'd on other grounds sub nom. Arkansas v. Oklahoma, 503 U.S. 91 (1992). Although our inquiry into the basis of the agency's action will be searching and careful, our review is ultimately a narrow one. See Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971). Review under the "arbitrary and capricious" standard "encompasses a range of levels of deference to the agency." American Horse Protection Ass'n v. Lyng, 812 F.2d 1, 4 (D.C.Cir. 1987) (AHPA) (citing WWHT, Inc. v. FCC, 656 F.2d 807, 817 (D.C.Cir. 1981)); accord Brown v. Secretary of Health and Human Servs., 46 F.3d 102, 110 (1st Cir. 1995). In determining the appropriate level of deference, we heed the nature and context of the challenged agency action or inaction.[13]

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[13] In Heckler v. Chaney, 470 U.S. 821, 831 (1985), the Supreme Court decided that agency refusals to take specific enforcement actions are presumptively unreviewable under the APA. However, the Court expressly did not address the level of deference due when the agency refuses to initiate

Substantial prudential concerns counsel particularly broad deference in the context of review of an agency refusal to initiate rulemaking. The D.C. Circuit has repeatedly observed that, within the range of deference embodied in the "arbitrary and capricious" standard, refusals to initiate rulemaking are at the high end. See, e.g., Capital Network Sys., Inc. v. FCC, 3 F.3d 1526, 1530 (D.C.Cir. 1993) (quoting AHPA, 812 F.2d at 4-5; citing Cellnet Communication, Inc. v. FCC, 965 F.2d 1106, 1111 (D.C.Cir. 1992)). Courts are ill-equipped and poorly situated to address important reasons for agency inaction, such as the decision that a "problem is not sufficiently important to justify the allocation of significant scarce resources given the nature of the many other problems the agency is attempting to address." 1 KENNETH C. DAVIS & RICHARD J. PIERCE, ADMINISTRATIVE LAW TREATISE § 6.9, at 280 (3d ed. 1994). "A court rarely has enough information to second guess agency decisions premised on this type of reasoning." Id.; see also Natural Resources Defense Council, Inc. v. SEC, 606 F.2d 1031, 1046 (D.C.Cir. 1979) ("An agency's discretionary

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rulemaking. Id. at 825 n. 2. The D.C. Circuit has held that the Chaney presumption does not apply to refusals to initiate rulemaking. AHPA, 812 F.2d at 4-5. See also Cass R. Sunstein, *Reviewing Agency Inaction After* Heckler v. Chaney, 52 U.Chi.L.Rev. 653, 680-83 (1985). The EPA agrees that its refusal to initiate rulemaking is reviewable.

decision *not* to regulate a given activity is inevitably based, in large measure, on factors not inherently susceptible to judicial resolution...."); AHPA, 812 F.2d at 4-5 (according heightened deference to refusal to initiate rulemaking).

Nonetheless, we will not blindly uphold agency refusals to initiate rulemaking in the face of new information. "[C]hanges in factual and legal circumstances may impose upon the agency an obligation to reconsider a settled policy or explain its failure to do so." Bechtel v. FCC, 957 F.2d 873, 881 (D.C.Cir. 1992). For example, "a refusal to initiate a rulemaking naturally sets off a special alert when a petition has sought a radical modification of a rule on the basis of a radical change in its factual premises." AHPA, 812 F.2d at 5. Thus, the D.C. Circuit has held "that an agency may be forced by a reviewing court to institute rulemaking proceedings if a significant factual predicate of a prior decision on the subject (either to promulgate or not to promulgate specific rules) has been removed." WWHT, 656 F.2d at 819 (describing Geller v. FCC, 610 F.2d 973 (D.C.Cir. 1979)).

An agency determination may also be vulnerable to challenge if it rests on an insufficient legal predicate. Where the agency's refusal to initiate rulemaking implicates questions of statutory interpretation, we use the familiar Chevron test. When we review an agency's interpretation of a statute it

administers, we ask two questions. "First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842-43 (1984). But "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." Id. at 843, 104 S.Ct. at 2782. If Congress has explicitly or implicitly delegated authority to an agency, "legislative regulations are given controlling weight unless they are arbitrary, capricious, or manifestly contrary to the statute." Id. at 844, 104 S.Ct. at 2782. "This deference is a product both of an awareness of the practical expertise which an agency normally develops, and of a willingness to accord some measure of flexibility to such an agency as it encounters new and unforeseen problems over time." International Bhd. of Teamsters v. Daniel, 439 U.S. 551, 566 n. 20 (1979).

B.

Mr. Maier asserts here that the existence of new technology mandates revision of the regulations governing publicly owned treatment works. The EPA does not controvert that NOD can now be controlled effectively. The central question on appeal is whether such control must be accomplished through the EPA's generally-applicable standards for secondary treatment, or whether the EPA may continue to address the problem on a case-by-case basis through the permit process.[14]

Mr. Maier argues that the EPA's refusal to initiate rulemaking is arbitrary and capricious because the development of the new technology has removed both the legal and factual predicate of the EPA's decision not to set parameters for NOD. Mr. Maier asserts that because the CWA is a "technology-forcing" statute, the development of cost-effective new technology must be incorporated into the EPA's generally-applicable secondary treatment regulations. Alternatively, he argues

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[14] In his initial appellate brief, Mr. Maier also argued that the EPA must amend its regulations to replace testing for oxygen depletion after five days (BOD5) with testing for ultimate oxygen depletion. In his reply brief, Mr. Maier concedes that this argument cannot stand alone and is founded on his argument about the need to set general parameters for NOD.

that even if the statute gives the EPA discretion to address NOD levels by permit, its decision to do so in this instance is not supported by the evidence before the agency or is based on the consideration of impermissible factors. Although there is substantial overlap between these arguments, we consider them in turn.

Under Chevron's first step, we ask "whether Congress has directly spoken to the precise question at issue." 467 U.S. at 842, 104 S.Ct. at 2781. Section 1311 of the CWA specifies:

> (a) Except as in compliance with this [and other] sections ... the discharge of any pollutant by any person shall be unlawful. (b) In order to carry out the objective of this chapter there shall be achieved--
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> ....
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> (1)(B) for publicly owned treatment works ..., effluent limitations based upon secondary treatment as defined by the Administrator pursuant to section 1314(d)(1) of this title....

33 U.S.C. § 1311 (emphasis added). In turn, section 1314(d) provides that "[t]he Administrator ... shall publish within sixty days after October 18, 1972 (and from time to time thereafter) information, in terms of amounts of constituents and chemical, physical, and biological characteristics of pollutants,

on the degree of effluent reduction attainable through the application of secondary treatment." Id. § 1314(d)(1). Aside from sections 1311 and 1314, the CWA does not further delimit "secondary treatment," or specifically constrain the Administrator in promulgating generally-applicable effluent limitations for POTWs.

Congress has not directly spoken to the precise question of whether the EPA has discretion to conclude that reductions in NOD are not required to be achieved by generally-applicable effluent limitations, but may instead be imposed by permit. The statute plainly delegates to the EPA authority to define secondary treatment, and to promulgate generally-applicable regulations based on its definition. We must therefore determine whether the EPA's secondary treatment regulations are a "permissible construction" of the CWA. Mr. Maier posits that the statutory definition of "secondary treatment" must include technology to reduce NOD and nutrients if such technology is available and cost-effective. He argues that the EPA's decision to control NOD by permit is not a legitimate policy choice because the CWA requires the EPA to promulgate generally-applicable effluent limitations for every pollutant that can be controlled with "secondary treatment." We disagree and conclude that the EPA's secondary treatment regulations are a permissible exercise of its authority under sections 1311 and 1314.

As an initial matter, we must reject Mr. Maier's claim that § 1314(d)(1) requires the Administrator to publish secondary treatment regulations for any pollutant that can be controlled via secondary treatment. That provision plainly mandates only that the EPA issue scientific information "from time to time." Compare 33 U.S.C. § 1314(d)(1) ("The Administrator ... shall publish ... from time to time ... information ... on the degree of effluent reduction attainable through the application of secondary treatment."), with id. § 1314(b) ("the Administrator shall ... publish ... regulations."). While it is true that where reductions in NOD are "attainable through the application of secondary treatment," id. § 1314(d)(1), the EPA may have a present duty under § 1314(d)(1) to publish information pertaining to those reductions, cf. Oljato, 515 F.2d at 662, the EPA is not required under that same provision to issue regulations limiting NOD discharges from POTWs. Mr. Maier has not advanced a duty-to-publish claim in the instant case, and we therefore do not consider this question further.

As a matter of statutory delegation and practical necessity, the EPA exercises its expertise to determine if a given technology ought to form the basis of the standard "secondary treatment" defined under section 1314(d)(1). The phrase "secondary treatment" has an independent meaning apart from its statutory context. "Conventional or secondary treatment of municipal waste includes biological processes, primarily

decomposition, with or without chemical disinfectants, to remove organic wastes." City of Sarasota, 813 F.2d at 1108 n. 7. The phrase distinguishes one stage in a variegated treatment system:

> There are three levels of wastewater treatment. Primary treatment refers to a physical sedimentation process for removing settleable solids. Secondary treatment refers to a physical/biological process for removing solids and pollutants characterized by biological oxygen demand and pH. Tertiary treatment involves processes which remove other pollutants such as non-biodegradable toxics.

Natural Resources Defense Council, Inc. v. EPA, 790 F.2d at 293 n. 2; see also California v. EPA, 689 F.2d 217, 218 (D.C.Cir.1982) (distinguishing secondary treatment, advance secondary treatment, and advance waste treatment). Although these descriptions suggest that NOD and nutrients fall within a general understanding of secondary treatment, they also demonstrate "secondary treatment" has a broad connotation.

The legislative history of the CWA also offers little guidance to the statutory definition of "secondary treatment" with respect to NOD. The EPA argues Congress intended that "secondary treatment" concern "organic" oxygen depletion, i.e., CBOD, but not NOD and nutrients. However, it is far from clear from the legislative history that this distinction was ever considered. As noted

in the House Report, "[s]econdary treatment as considered in the context of a publicly owned treatment works is generally concerned with suspended solids and biologically degradable, oxygen demanding materials (BOD)." H. REP. NO. 92-911, at 101 (1972). It appears more likely that when the CWA was enacted, treatment for NOD simply was not technologically feasible. See, e.g., Secondary Treatment Regulation, 49 Fed.Reg. 36,986, 36,988 (1984) (to be codified at 40 C.F.R. pt. 133) ("Secondary treatment requirements are based on controlling the oxygen demand due to the carbonaceous component of the organic material in the effluent because secondary treatment facilities can effectively remove carbonaceous organic material ... but may not consistently remove ammonia."); Secondary Treatment Information, 48 Fed.Reg. 52,272, 52,273 (1983) (" '[N]utrients ... were not specified for inclusion, because secondary treatment, under normal conditions, does not effectively or consistently remove them.' ") (citation omitted). Congress did not speak to the problem confronting us because for practical purposes it did not yet exist.

Given the broad category of treatment processes and technology encompassed by "secondary treatment," and statutory delegation to the Administrator to define secondary treatment, we do not find it impermissible for the EPA to refuse to extend its definition of standard secondary treatment to include controls on NOD. The EPA has consistently classified NOD reduction as a form of

"advanced treatment" that will be required by permit if necessary to protect water quality. See, e.g., Secondary Treatment Information, 48 Fed.Reg. 52,272, 52,275 (1983) (proposed Nov. 16, 1983) (describing nitrification processes as "beyond secondary" treatment). We do not agree with Mr. Maier or the dissent that technological feasibility is the only criterion the EPA may use to determine which of the universe of secondary treatment technologies ought to be considered standard. Here, the agency's choice is supported by its reasoned consideration of other factors that lie within its expertise in administering the statute.[15]

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[15] The dissent claims the EPA is foreclosed from exercising its discretion to exclude NOD from its definition of secondary treatment because the agency has used secondary treatment regulations to control BOD, of which NOD is a component. As our discussion in part I.B makes clear, however, BOD parameters have historically been set by the agency as a rough proxy for CBOD. At the time that the BOD limitations were first promulgated, control of the NOD component was not technologically feasible. As the dissent constantly reminds us, secondary treatment is technology-based. The BOD parameter was thus targeted at CBOD, for which reductions were technologically attainable, and not at NOD, for which reductions were not technologically attainable. By the time of the EPA's 1984 rulemaking, a nitrification-inhibited test was developed which

Section 1311(b)(1)(B), in conjunction with section 1314(d)(1), provides for the promulgation of generally-applicable effluent limitations for POTWs. Section 1311(b)(1)(B) gives the EPA authority to determine the stringency and scope of generally-applicable effluent limitations that are based on secondary treatment. Thus, even if reductions of NOD and nutrients potentially fall within the definition of "secondary treatment," the EPA must determine if it should promulgate generally-applicable effluent limitations for these specific pollutants. The statute requires that generally-applicable effluent limitations for POTWs be "based upon secondary treatment." 33 U.S.C. § 1311(b)(1)(B) (emphasis added). Contrary to Mr. Maier's assertion, the statute does not on its face require that the generally-applicable effluent limitations address all pollutants that might be reduced by secondary treatment.[16] When we

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allowed for the isolation of the CBOD component. The EPA promulgated regulations approving the use of the CBOD test in lieu of the general BOD test. The EPA has never set discrete limitations on the NOD component.

[16] On its face, the CWA gives the EPA less discretion in setting effluent limitations on point sources other than POTWs. See 33 U.S.C. § 1311(b)(2)(A) (stating that for certain identified toxic pollutants "there shall be achieved ... effluent limitations ... which shall

apply the deference due an administrative agency which Chevron mandates, "[t]he permissive nature of the statute implies broad agency discretion in selecting the appropriate manner of regulation." Professional Drivers Council v. Bureau of Motor Carrier Safety, 706 F.2d 1216, 1221 (D.C.Cir. 1983). EPA's position that the statute allows the agency to impose limits for NOD on a case-by-case basis through the permitting process is a reasonable and permissible reading of the statute, to which we must defer.[17]

The EPA's exercise of its discretion under sections 1311 and 1314 is not in these circumstances arbitrary, capricious, or manifestly contrary to the statute. The EPA has made the

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require the application of the best available technology economically achievable.").

[17] The dissent suggests that our analysis of section 1311 substitutes our own construction of the statute for that advanced by the agency. In so doing, the dissent fails to distinguish between the source of agency discretion, which we must determine in the first instance under Chevron, and the basis for the agency's exercise of its discretion, for which the dissent correctly observes we may not supply our own rationale. Moreover, we may not avoid construing the statute to the extent necessary to determine that the agency's regulations are not "manifestly contrary to the statute." Chevron, 467 U.S. at 844.

uncontroverted claim that the effect of NOD is highly variable and site-specific, and thus not appropriate to a general regulation applicable to every POTW. Here, the EPA and the States approved to administer the NPDES permit program routinely impose NOD and nutrient limitations on POTWs on a case-by-case basis by permit. We are not faced with a situation in which the EPA has chosen to ignore a pollutant or category of pollutants for which effluent reductions are attainable by secondary treatment. The EPA has not substituted control by permit for control by generally-applicable effluent limitation without a reasoned explanation for its choice of method. Contrary to the dissent's suggestion, the EPA has not sought, nor do we approve, "general discretion to define secondary treatment to cover only those pollutants that are--in the view of the Administrator--more appropriately regulated via generally-applicable regulations rather than case- by-case quality-based limits." Dissent at 1049. The EPA's discretion is not unbridled.

This brings us to Mr. Maier's second argument, which is that the EPA's refusal to include parameters for NOD and ultimate BOD in its secondary treatment regulations in this instance was nonetheless arbitrary and capricious because the refusal was not supported by the evidence and was based on a consideration of impermissible factors. The Supreme Court has stated

> an agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983). The Court's statement is equally applicable to an agency's basis for declining to make a rule.

The EPA does not dispute that one factual predicate of the existing regulations has changed--the feasibility and cost-effectiveness of technology to control NOD. See WWHT, 656 F.2d at 819 ("[A]n agency may be forced by a reviewing court to institute rulemaking proceedings if a significant factual predicate of a prior decision on the subject ... has been removed."). Mr. Maier argues that technological feasibility is the only criterion the EPA may use to determine which secondary treatment controls ought to be generally applicable, and which may be imposed on a case-by-case basis. We disagree. The agency's decision to control NOD and nutrients by permit is supported by two other factual predicates that lie within its expertise in administering the statute: first, the impact of NOD and nutrients on water quality is highly

variable with the characteristics of the receiving body of water; second, control of NOD by permit adequately protects water quality where necessary. Mr. Maier does not dispute these factual premises. Instead, he argues that the first is a legally impermissible consideration, and he explicitly eschews a challenge to the second.[18]

Mr. Maier observes Congress intended the effluent limitations in the CWA to be technology-based, not based on assessments of water quality. In general, we agree. See EPA v. California ex rel. State Water Resources Control Board, 426 U.S. 200, 204-05, 96 S.Ct. 2022, 2024-25, 48 L.Ed.2d 578 (1976). However, effluent limitations for POTWs must be "based upon" secondary treatment technology, not co-extensive with it. We do not agree with Mr. Maier that it is impermissible for the EPA to consider effects on water quality in determining whether reductions attainable by new secondary treatment technology ought to be uniformly imposed on all POTWs. The purpose of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters...." 33 U.S.C. § 1251(a). The EPA relies on statutory language

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[18] In his Reply Brief, Mr. Maier appends material pertaining to the effectiveness of the permitting process in protecting water quality from NOD. We decline to consider this material as it was not presented in the petition to the EPA for consideration by the agency.

authorizing the EPA to use the permitting process to impose "more stringent limitation[s]" on POTWs where necessary to protect water quality. 33 U.S.C. § 1311(b)(1)(C). We need not determine if section 1311(b)(1)(C) directly authorizes the use of permitting as an alternative to, as opposed to a supplement for, generally-applicable effluent limitations.[19] The fact that Congress has, in this closely related statutory section, provided for quality-based permitting as a gap-filling measure gives strong support to the EPA's exercise of delegated authority to fill the gap where it has concluded that NOD should not be part of standard secondary treatment. The fact that secondary treatment controls are technology-based does not preclude the EPA from deciding that certain technologically-attainable standards are necessary and appropriate only for some POTWs. We should not order the agency to develop generally-applicable parameters based on the use of new technology, even if cost-effective, in the face of the agency's reasoned judgment that the use of such technology is irrelevant to the attainment of water quality standards in many circumstances.

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[19] The dissent asserts that the "more stringent" permits described in section 1311(b)(1)(C) may only come into play where a generally- applicable regulation is not technologically feasible, or as a supplement when the generally-applicable regulation is inadequate to protect water quality.

Contrary to the suggestion of the dissent, we do not approve the EPA's regulations based on the agency's naked "policy preference for quality-based controls rather than generally applicable limitations." Dissent at 1048. The EPA has articulated its uncontroverted view that NOD is highly variable with the conditions of the receiving body of water. Consequently, NOD is particularly unsuited for a generally applicable regulation, and is appropriately dealt with--and is being dealt with--by permit. We agree with the dissent that the Clean Water Act amendments created a statutory regime in which technology-based standards are the primary mechanism of controlling discharge of pollutants. It is a far stretch from this presumption to the conclusion that the EPA may not exercise its authority in filling the gaps to conclude that certain pollutants, due to their peculiar characteristics, need not be controlled by across-the-board standards. Contrary to the dissent's inference, we do not hold that the EPA may choose a permit-based approach over a technology-based standard merely based on the agency's "policy preference."

The dissent gives lip service to the notion of deference to the agency, but the deference it would give is cramped indeed. The dissent asserts that to satisfy Chevron, "the implementing agency must point to some language in the statute to justify its policy conclusion--here, that the POTW regulatory regime can legitimately depart from the core public policy of the Clean

Water Act." Dissent at 1048-49. This turns the Chevron test on its head: the dissent, rather than deferring to the agency's gap-filling unless "manifestly contrary to the statute," imposes on the agency the burden of proving that its gap-filling is manifestly authorized by the statute--in which case it would be unnecessary to invoke the Chevron framework in the first instance. We are faced with a paradigmatic situation calling for deference to the agency: where the statute allows the agency to exercise discretion, we should defer to the agency's use of its expertise in striking a careful balance between the broad statutory purposes and the unique problems posed by specific pollutants and technologies. The EPA has offered a reasoned basis for its belief that this balance is to apply a technology-based standard to some, rather than all, POTWs.

Mr. Maier argues that, even if the EPA is right about the costs of retrofitting existing POTWs, new facilities can be designed to treat NOD at no greater expense and the EPA should so require. Even if this is true, we are not persuaded the EPA's failure to so act is arbitrary or capricious. The EPA maintains that NOD is adequately addressed on a plant-by-plant basis. Mr. Maier has failed to demonstrate that stricter standards in individual permits are not effective in promoting the building of these newer, more effective designs. Moreover, this argument ignores the real costs of administering environmental laws. Promulgating revised regulations necessitates a substantial

commitment of limited agency resources. We have "little ability to determine the resources available to the agency or to determine whether the other problems to which the agency has chosen to devote its scarce resources are more or less important than the problem raised in the petition." 1 DAVIS & PIERCE, ADMINISTRATIVE LAW TREATISE § 6.9, at 280.

On the record in this case, we cannot hold that the EPA's interpretation of the CWA is arbitrary or capricious, or that its rejection of rulemaking in this instance is arbitrary or capricious. Since the EPA first promulgated regulations under Section 1311, it has never required that all oxygen-depleting pollutants be removed by means of generally-applicable secondary treatment controls. These regulations do not stand alone; rather, they set a national floor for the performance of secondary treatment systems. Primary and tertiary treatments complement their function, and individual permits for treatment facilities can have stricter standards. EPA makes a reasoned argument that where NOD is a problem, it may be addressed in the terms of a POTW's permit, and points out that 53% of major secondary treatment facilities across the country now have such requirements. Rec. at 123. Mr. Maier would have to provide impressive evidence that the EPA has acted irrationally. He has not done so. Without a more convincing showing that the nation's municipal water treatment system is broken, we will not order the EPA to fix it. **AFFIRMED.**

LUCERO, Circuit Judge, concurring in part and dissenting in part.

I join parts I, II, and IIIA of the majority's opinion, but must respectfully dissent from part IIIB. The majority concludes that the EPA's interpretation of the secondary treatment provisions is "permissible" and therefore valid under Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984). I cannot agree for two reasons. First, one "permissible" interpretation identified by the majority is not in fact advanced by the EPA. We cannot defer under Chevron to an agency construction when the agency has not construed the language at issue. Second, on this record, the EPA's construction of the term "secondary treatment" is not permissible. While the Clean Water Act ("CWA") gives the Administrator discretion to define secondary treatment pursuant to the statute, that discretion cannot be exercised in a manner inconsistent both with the structure and legislative history of the statute and with the Administrator's own prior interpretation of the term. In allowing the substitution of quality-based controls for generally-applicable, technology-based effluent limitations, the majority allows the EPA to return clean water regulation to the pre-1972 era.

The EPA does not itself argue that the language of 33 U.S.C. § 1311(b)(1)(B)--that "there shall be achieved ... effluent limitations based upon secondary treatment"--gives it

discretion to set effluent limitations lower than those deemed attainable through the application of secondary treatment. The majority's resolution, to the extent it finds discretion for the EPA's decision from the term "based upon," see Maj. Op. at [29-30], is premised on its own construction of the statute, not the EPA's. That runs counter to the logic of Chevron deference and consequently to a core principle of judicial review of agency action. "If the basis stated by the agency for its decision is insufficient, we may not supply another that the agency itself has not chosen to rely on." American Meat Inst. v. EPA, 526 F.2d 442, 453 (7th Cir. 1975) (citing SEC v. Chenery Corp., 332 U.S. 194, 196 (1947) ("[T]he court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis. To do so would propel the court into the domain which Congress has set aside exclusively for the administrative agency.")). If Congress has implicitly or explicitly left gaps in a statutory scheme, Chevron requires us to defer to reasonable efforts on the part of the agency to fill those gaps through policy and rule-making, see 467 U.S. at 843-44, 104 S.Ct. at 2781-83, and is explicitly concerned with the agency's construction of congressional language to fill those gaps, id. Such gap- filling can only be upheld if the agency's own rationale for its actions-- including its construction

of the statute-- is proper.[1]

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[1] The majority argues that I fail to distinguish between "the source of agency discretion, which we must determine in the first instance under Chevron, and the basis for the agency's exercise of its discretion, for which ... we may not supply our own rationale." Maj. Op. at [30] n. 17. The majority's distinction is untenably semantic because an agency's exercise of discretion under Chevron must be based on its claimed statutory source of discretion. In reviewing the former, a court is bound to review the latter. The majority would have the reviewing court independently root through the statute on its own cognizance looking for gaps that the agency's policymaking might permissibly back-fill. What the majority has done is to identify an ambiguous portion of the statute, i.e. the "based upon" language of § 1311(b)(1)(B), and defended the agency's failure to promulgate generally-applicable NOD effluent limitations on the basis of the court's own construction of that ambiguous term. Quite aside from the fact that the EPA has implicitly disavowed this particular construction of the statute, Chevron contains absolutely no authorization for approving administrative constructions in this manner. The most that the majority can conceivably make of the "based upon" language of § 1311(b)(1)(B) is that the administrative construction of "secondary treatment" does not violate that particular statutory provision. This view is probably unsustainable in light

Reviewing the Agency's denial of Maier's petition, its briefs, as well as the material accompanying its earlier promulgation and amendment of secondary treatment regulations, I can find no suggestion from the Administrator that were she to find reductions of a particular pollutant attainable by means of secondary treatment, she would not need to promulgate a generally-applicable effluent limitation for that pollutant. Indeed, the Agency may hold a contrary view of its § 1311(b)(1)(B) discretion. In responding to Maier's petition, the Administrator states that were technologies to control NOD considered to be secondary treatment, "[a]ny such revised secondary treatment requirements would be universally applicable to all POTWs pursuant to section 301(b)(1)(B) [33 U.S.C. § 1311(b)(1)(B)]." A.R. at 123-24; see also EPA Br. at 26 ("Were NOD limitations to be made part of 'secondary treatment,' they would apply to all POTWs regardless of local conditions.").

Moreover, the relevant regulatory history strongly suggests that the Agency would not interpret the "based upon" language in § 1311(b)(1)(B) to give it discretion to depart from reductions attainable by the technology described in

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of the EPA's previous interpretation of § 1311(b)(1)(B). But even assuming its validity, the majority's view fails to show that the administrative construction of "secondary treatment" does not fall afoul of some other provision of the CWA.

33 U.S.C. § 1314(d)(1). Effluent limitations on POTWs are set pursuant to 40 C.F.R. § 133.102. This regulation, which the Agency refers to as the Secondary Treatment Information regulation, consistently cites both § 1311(b)(1)(B) and § 1314(d)(1) as its statutory authority, see, e.g., 41 Fed.Reg. 37222 (1976), and has never suggested that reductions deemed attainable via secondary treatment need not be translated directly into applicable effluent limitations. Rather, the Agency has implicitly viewed the Secondary Treatment Information regulation as simultaneously satisfying both its information publication obligations under § 1314(d)(1) and its limitation promulgation obligations under § 1311(b)(1)(B). See, e.g., 42 Fed.Reg. 54664 (1977) ("The Secondary Treatment Information regulation contains effluent limitations in terms of biological oxygen demand, suspended solids and pH which must be achieved by municipal wastewater treatment plants ... in accordance with section 301(b)(1)(B) of the ... FWPCA. The Secondary Treatment Information regulation was promulgated pursuant to section 304(d)(1) of the FWPCA.").

In fact, the Agency appears to regard the Secondary Treatment Information regulation as simultaneously defining secondary treatment and establishing the effluent limitations applicable to POTWs. See 41 Fed.Reg. 37222 (1976) ("Secondary treatment (as defined in 40 C.F.R. 133) is the minimum level of treatment required for all publicly-owned treatment works."); 49

Fed.Reg. 36987 (1984) ("The secondary treatment regulation defines 'secondary treatment' as attaining an average effluent quality for both biochemical oxygen demand, five-day (BOD 5) and SS of 30 mg/l in a period of 30 consecutive days, an average effluent quality of 45 mg/l for the same pollutants in a period of 7 consecutive days, and 85 percent removal of the same pollutants in a period of 30 consecutive days."). Agency practice has thus never recognized a disjunction between its obligation to publish attainable reductions under § 1314(d)(1) and to promulgate effluent limitations under § 1311(b)(1)(B). Yet the majority's "based upon" analysis would create this disjunction and effectively attribute it to the Agency's discretion.

The Agency claims "considerable discretion ... to define 'secondary treatment.' " EPA Br. at 27. Exercising this definitional discretion, the Agency asserts that controls on NOD and nutrients "simply should not be required as part of 'secondary treatment.' " Id. at 25. Were the Administrator responding to Maier's petition in a regulatory vacuum, we might be required to defer to this agency definition of secondary treatment. But that is not the case. The secondary treatment regulations have always set controls on biological oxygen demand (BOD), see 38 Fed.Reg. 10642 (1973) (defining minimum level of BOD reduction attainable through application of secondary treatment), and such "gap-filling" appears entirely consistent

with the applicable legislative history.[2] Moreover, as noted above, BOD controls, in conjunction with those imposed on certain other pollutants such as suspended solids, have been administratively regarded as defining secondary treatment.

The Agency recognizes that NOD is one of two components of BOD, the other being carbonaceous BOD (or "CBOD"). See, e.g., 48 Fed.Reg. 52272, 52274 (1983). Maier's petition therefore requests the Agency to apply specific controls to a pollutant whose restriction falls broadly within the administrative and legislative understanding of secondary treatment. Of course, given the EPA's statutorily-conferred discretion to achieve "effluent limitations based upon secondary treatment," § 1311(b)(1)(B), the EPA may not be obliged to impose secondary treatment-based controls on NOD. But having included the control of oxygen-depleting compounds within the general definition of secondary treatment, it is incumbent upon the EPA to explain its refusal to promulgate NOD and nutrient limitations.

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[2] "Secondary treatment as considered in the context of a publicly-owned treatment works is generally concerned with suspended solids and biologically degradable, oxygen demanding materials (BOD)." H.Rep. No. 92- 911, 92d Cong., 2d Sess., at 101 (1971), quoted in Proposed Rule, 48 Fed.Reg. 52272, 52273 (1933).

In the past, the Administrator has principally explained the refusal to treat NOD controls as part of secondary treatment as proceeding from the impracticality of such controls. See, e.g., 49 Fed.Reg. 36986, 36988 (1984); 48 Fed.Reg. 52272, 52273 (1983) (citing supporting documentation for 1973 regulations). Such a decision, if adequately supported by the record, is well within the Administrator's rulemaking discretion. In denying Maier's petition, the EPA now points to two factors. First, the Agency reiterates that secondary treatment is concerned with the removal of carbonaceous organic material. This argument begs the question. If Maier's petition questions the EPA's earlier conclusion as to non-attainability, the Agency should explain its continued reliance on its previous explanation. The EPA has not done so, instead insisting that any new information on attainability submitted by Maier "does not establish (or even suggest) why control of nitrogen or phosphorus should be considered secondary treatment." A.R. at 125.

That error alone would not require us to remand to the Agency were the second factor relied on by the Administrator to deny Maier's petition more persuasive. It is not. The Agency's second defense of its secondary treatment regulations is to point to its policy preference for quality-based controls rather than generally applicable limitations, at least for pollutants that do not have a uniform impact on receiving

bodies of water. See A.R. at 113-14, 123; see also EPA Br. at 19-20. The EPA may yet have good reasons for refusing to regulate NOD via generally-applicable effluent limitations on POTWs, but a policy preference for quality-based measures over generally- applicable technology-based measures is not one of them. Such a preference improperly construes the CWA.

Before 1972, the stated purpose of the Federal Water Pollution Control Act ("FWPCA") was "to enhance the quality and value of our water resources and to establish a national policy for the prevention, control, and abatement of water pollution." 33 U.S.C. § 1151(a) (1970) (superseded by Pub.L. 92- 500, § 2, 88 Stat. 816 (1972)). To this end, the pre-1972 legislation employed ambient water quality standards as the primary mechanism for water pollution control. See EPA v. California ex rel. State Water Resources Control Bd., 426 U.S. 200, 202 (1976). The 1972 Amendments to the FWPCA, popularly known as the Clean Water Act, deliberately ended this approach. Prompted by the Senate Committee on Public Works' review of the FWPCA program, and its conclusion that "the national effort to abate and control water pollution has been inadequate in every vital respect," S.Rep. 92-414, at 7, reprinted in 1972 U.S.C.C.A.N. 3668, 3674, Congress declared as the new national goal of the program that "the discharge of pollutants into the navigable waters be eliminated," 33 U.S.C. § 1251(a)(1). Consistent with this end, the CWA substituted

technology-based, generally-applicable effluent limitations for water quality-based regulatory approaches. See State Water Resources Control Bd., 426 U.S. at 204, 96 S.Ct. at 2024 ("Such direct restrictions on discharges facilitate enforcement by making it unnecessary to work backward from an overpolluted body of water to determine which point sources are responsible and which must be abated."). The legislative history of the Act is replete with references to the need for this substitution.[3]

The EPA's denial of Maier's petition effects an entirely opposite substitution. In order for an administrative construction that runs counter to basic policies underlying the relevant statutory scheme to be reasonable under the second step of Chevron, the implementing agency must point to some language in the statute to justify its policy conclusion--here, that the POTW regulatory regime can legitimately depart from the core public

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[3] The Senate Report accompanying the CWA notes: "The application of Phase I technology to industrial point sources is based upon the control technologies for those sources and to publicly owned sewage treatment works is based upon secondary treatment. It is not based upon ambient water quality considerations." S.Rep. 92-414, at 43, reprinted in 1972 U.S.C.C.A.N. 3668, 3710 (emphasis added).

policy of the CWA.[4] The Administrator has not done so. Her passing reliance on § 1311(b)(1)(C), which allows the Administrator to set "more stringent limitation[s]" to meet water quality standards, is misplaced. At most, that provision allows the Administrator to set quality-based limits for pollutants that cannot be attainably reduced by secondary treatment, or to set supplementary quality-based limits for pollutants already regulated by a floor of generally-applicable limitations based on secondary treatment. It cannot reasonably be read as general discretion

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[4] Contrary to the majority's assertion, placing this obligation on the Administrator does not "turn[ ] the Chevron test on its head." Maj. Op. at [35-36]. Chevron authorizes the Administrator to fill legislative gaps, but only when done in compliance with her statutory policymaking discretion. Chevron, 467 U.S. at 843-44. Here, the EPA has without justification chosen to fill a gap by means of a policy that contravenes the most fundamental tenet of the CWA. See Maislin Indus., U.S. v. Primary Steel, 497 U.S. 116, 134-35 (1990) (agency "does not have the power to adopt a policy that directly conflicts with its governing statute"). Without some language suggesting that POTWs are exempt from the force of this basic statutory imperative, the EPA's regulatory inaction must be regarded as "manifestly contrary to the statute," and accordingly invalid under Chevron. 467 U.S. at 844.

to redefine secondary treatment to cover only those pollutants that are--in the view of the Administrator--more appropriately regulated via generally-applicable regulations rather than case-by-case quality-based limits. That interpretation makes a mockery of the primacy accorded technology-based regulation by the plain language and legislative history of the CWA.

In fact, Congress has itself confirmed that POTWs are not exempted from this core policy. In 1977, Congress enacted 33 U.S.C. § 1311(h), which permits the Administrator, on a case-by-case basis, to relax secondary treatment requirements for POTWs releasing pollutants into marine waters. See 33 U.S.C. § 1311(h). If the EPA has the discretion relied on by the Administrator in the present case, this provision was (and is) entirely unnecessary. The Administrator could simply declare that the biological treatment of pollutants by POTWs that release into marine waters is not "secondary treatment" because she has made the policy choice to address such discharges solely through individual NPDES permit requirements. In passing § 1311(h), Congress effectively stated that such discretion was not open to the Administrator. Cf. Bridger Coal Co. v. Director, Office of Workers' Compensation Programs, 927 F.2d 1150, 1153 (10th Cir. 1991) (statute should be interpreted to give meaning and effect to each provision). It is not our place to offer discretion to the Agency where Congress

has not.[5]

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[5] The majority states that it is not authorizing the EPA's exercise of general policy discretion to substitute quality-based restrictions for generally-applicable, technology-based effluent limitations, but is instead restricting the EPA's discretion to cases in which it advances a "reasoned explanation" for this substitution. See Maj. Op. at [35]. I am not so sure. Nowhere does the CWA suggest that its clear technology-first imperative is subject to cancellation by the agency's "reasoned explanations." Nor does the majority explain why in the absence of statutory authorization, the EPA is free to ignore that imperative on the basis of its own "reasoned explanations." See Director, Office of Workers' Comp. v. Newport News, 514 U.S. 122, 136 (1995) ("Every statute proposes, not only to achieve certain ends, but also to achieve them by particular means.... The withholding of agency authority is as significant as the granting of it, and we have no right to play favorites between the two."). Finally, the majority fails to explain why the qualitative variability of pollutant discharges constitutes such a "reasoned explanation," or what other types of agency explanation would or would not allow for a similar departure from the basic public policy of the CWA. Without some limiting principle, it is hard not to conclude that the majority is essentially deferring to the EPA's policy preference for quality-based standards.

On a number of occasions, the Agency has itself confirmed that "effluent limitations based upon secondary treatment" cannot be fixed by reference to quality-based considerations. See, e.g., 38 Fed.Reg. 22298 (1973) (POTW effluent limitation regulation "is to be based on the capabilities of secondary treatment technology and not ambient water quality"); 41 Fed.Reg. 30786, 30788 (1976) (same). In denying Maier's petition, the Administrator alludes to this constraint, see A.R. at 117 ("[T]he definition of secondary treatment is to be technology-based rather than water quality based"), then ignores it without explanation.

The denial of Maier's petition must be "based on a consideration of the relevant factors." Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971). Here, the EPA's denial is based on one factor that is illegitimate--its "reasoned" policy preference for quality-based over generally-applicable, technology-based restrictions--and another that is legitimate but unsubstantiated--the nonattainability of NOD reductions.[6] I

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[6] The majority states that I view technological feasibility as the "only criterion" that the EPA can use to define secondary treatment. Maj. Op. at [28]. That is incorrect. Our review is appropriately confined to the reasons given by the EPA for its denial of Maier's petition. In my view, the only argument the EPA offers that is not

would remand the petition to the Agency for reconsideration in light of the correct legal principles. See American Horse Protection Ass'n v. Lyng, 812 F.2d 1, 7-8 (D.C.Cir. 1987).

"manifestly contrary to the statute," is one based on unsubstantiated claims of technological feasibility. This should not be contorted to mean that the EPA's only possible basis for defining secondary treatment is technological feasibility.

APPENDIX B - PETITION FOR RULEMAKING BEFORE THE ENVIRONMENTAL PROTECTION AGENCY, DATED AUGUST 6, 1993

PETITION FOR RULEMAKING BEFORE THE ENVIRONMENTAL PROTECTION AGENCY

To Amend the Secondary Treatment Regulations For Biochemical Oxygen Demand for Publicly-Owned Treatment Works, 40 C.F.R. Part 133

Petitioners: Peter Maier, P.E.; Sierra Club, Utah Chapter; Intermountain Water Alliance; Southern Utah Wilderness Alliance; Western Colorado Congress; Stone Fly Society Chapter of Trout Unlimited and the Federation of Fly Fishers; and the Utah Wilderness Association.

Submitted August 6, 1993.

TABLE OF CONTENTS

INTRODUCTION 3

I. LEGAL BASIS FOR PETITION 3

A. Authority for This Petition and Availability of Judicial Review 3

B. Legal Inadequacy of the Present Regulations and Need for Revision . . . 7

II. FACTUAL BASIS FOR PETITION 9

A. Historical Background of Secondary Treatment 9

B. Deficiencies Caused by Incorrect BOD Testing 11

1. Current BOD Testing Ignores N-BOD 11

2. Current BOD Testing Only Represents the 5-Day Value, Not the Ultimate Value 15

C. Required Formula for Accurate Testing of BOD Values 15

D. Best Practicable Waste Treatment Technology 16

E. Proposed Testing and Effluent Limitation Amendments 19

CONCLUSION 20

LIST OF PETITIONERS AND THEIR ADDRESSES . .21

APPENDICES [Excluded from Appendix to Petition for Writ of Certiorari]

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PETITION FOR RULEMAKING

INTRODUCTION:

Peter Maier, P.E.; Intermountain Water Alliance; Sierra Club, Utah Chapter; Southern Utah Wilderness Alliance; Western Colorado Congress; Stone Fly Society Chapter of Trout Unlimited and the Federation of Fly Fishers; and the Utah Wilderness Association ("petitioners") hereby petition the Environmental Protection Agency (EPA) to amend its Secondary Treatment Regulations for Publicly Owned Treatment Works (POTWs), 40 C.F.R. Part 133. Specifically, the purpose of this petition is to amend the regulations governing Biochemical Oxygen Demand (BOD). These amendments are necessary to implement the Clean Water Act's (CWA) requirements for the application of best practicable waste treatment technology for POTWs.

I. LEGAL BASIS FOR PETITION

A. Authority for This Petition and Availability of Judicial Review

The authority for this petition arises under both the CWA and the Administrative Procedures Act , 5 U.S.C. §

551 et. seq. (APA). Section 553(e) of the APA provides that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule." The petitioners are "interested persons," being individuals and groups that have had a long-standing interest in the quality of this nation's navigable waters, and who are affected in the use of those waters for drinking, agriculture, fish consumption and recreation by the quality mandated by the EPA.

Authority for this petition also arises under CWA section 509(b), 33 U.S.C. § 1369(b). Under this section, an interested person may apply to review a CWA regulation in a federal Circuit Court of Appeals following the 120-day limitations period, provided that the petition is based on "new information." This petition is based on new information since the last revision of the regulations, which began in 1982 and which ended with the promulgation of final rules in 1984.[1] However, judicial precedent indicates that before such a review can be had, a petition for rulemaking must first be presented to the EPA.[2] Notwithstanding this judicial

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[1]. 49 Fed. Reg. 37,006, Sept. 20, 1984; 49 Fed. Reg. 40,405, Oct. 16, 1984. The new information upon which this petition is based includes information contained in appendices I, III, IV, V, VI, VIII, IX & XI.

[2]. Oljato Chapter of the Navajo Tribe v. Train, 515 F.2d 654 (D.C. Cir. 1975). The court in Oljato was hearing a challenge to a standard of performance under the Clean Air Act (CAA), pursuant to section 307 of that act. Like this petition, that case involved

precedent, the petitioners also believe that a petition before the EPA to amend the regulation is a more appropriate forum than federal court. However, in the event that this petition is denied, the petitioners intend to seek review of the denial in federal court under CWA section 509(b).[3]

As the Oljato court stated, "EPA should respond to the petition and, if it denies the petition, set forth its

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a challenge arising after the limitations period for challenging a rule, based upon new information. The court determined that the challenge could be heard, but only after a petition for rulemaking was first made to the EPA.

Although that case dealt with the CAA, the judicial review section of the CWA is the same in all applicable respects, and indeed CWA section 509 was based on section 307 of the CAA. Further, this petition provision was applied to the CWA (although not in the context of a petition based upon "new information") in Save the Bay v. Administrator of EPA, 556 F.2d 1282 (5th Cir. 1977).

[3]. The court in Oljato, *supra*, specifically stated that "[i]f the petition is denied, the petitioner may seek review of the denial in this court pursuant to [CAA] section 307." Likewise, review would be available here under CWA section 509(b).

Review in federal court would also be available under section 704 of the APA which provides that "final agency action for which there is no adequate remedy in a court [is] subject to judicial review."

reasons." Likewise, section 553 of the APA requires the EPA to at least provide "a brief statement of the grounds for denial," if in fact the petition is denied. The adequacy of this statement of reasons can also be reviewed in federal court.[4] The petitioners request the EPA to respond within 60 days, which we believe to be a reasonable time.[5] If the EPA cannot make a decision on the merits of the petition within 60 days, we request that the EPA notify the petitioners of its schedule of action within this time.

Petitioners also request public hearings on this matter, and full notice and comment opportunities. We believe that this is in the best interests of all involved, including those who might be opposed to the new regulations requested by the petitioners. We request that a least one hearing be held in Denver, as it is a central location in the West, where the petitioners reside.

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[4]. See NRDC v. SEC, 389 F.Supp. 689, 702 (D.D.C. 1974) (remanding for lack of section 553(e) statement), 432 F.Supp. 1190, 1208 (D.D.C. 1977) (holding explanation in subsequent section 553(e) statement to be arbitrary and capricious), and 606 F.2d 1031, 1042-53 (D.C. Cir. 1979) (reversing district court on merits, but holding that review was available).

[5]. See Environmental Defense Fund v. Hardin, 428 F.2d 1093, 1099 (D.C. Cir. 1970), where the court required the EPA to respond to the petitioners within 30 days on an action relating to the registration of DDT.

B. Legal Inadequacy of the Present Regulations and Need for Revision

The CWA has a general mandate that the discharge of pollutants into the navigable waters of the United States be eliminated by 1985, and made swimmable and fishable by 1983. CWA § 101. Although this has clearly not occurred, it is still the duty of the EPA to work towards these goals. Further, the CWA contains specific provisions that require the EPA to amend its regulations governing secondary treatment of sewage from POTWs whenever it appears that better technology exists to treat waste better than that which is being utilized to meet current regulations. This is especially true when implementation of new regulations can be achieved at an equal or lesser cost than the ones now in place, as is the case with the petitioners' proposed amended regulations for BOD.

Specifically, CWA section 304(d)(2) requires that from time to time EPA shall promulgate information and guidelines to implement section 201. Section 201(b) requires waste treatment management plans and practices which shall apply the "best practicable waste treatment technology before any discharge into receiving waters."[6] This means that the

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[6]. This includes the "confined disposal of pollutants so they will not migrate to cause water or other environmental pollution and shall provide for consideration of advanced waste treatment techniques." Section 201(d)(1) further requires "the recycling of potential sewage pollutants through the production of agriculture, silviculture, or aquaculture products."

EPA must set the most stringent effluent standards which are achievable at a reasonable cost- not just to set standards that existing POTWs can automatically meet. CWA requirements are intended to be technology-forcing, not technology-accommodating. This petition shows that the current regulations do not reflect the best practicable treatment technologies, and that the proposed regulations would go a long way towards achieving the best practicable technologies available.

The current regulations also violate CWA section 304(d)(4), which mandates that the EPA must set secondary treatment standards for treatment facilities by "assuring that water quality will not be adversely affected by deeming such facilities as the equivalent of secondary treatment." As fully explained in part II of this petition, the EPA is violating this mandate through its secondary treatment regulations, 40 C.F.R. Part 133, which allow up to 65% of the waste from POTWs to be ignored by the present regulations. The present regulations do not assure that water quality is not adversely affected, and must be changed. As also explained in part II, it should be emphasized that the proposed regulations would not increase construction costs for new POTWs, and in fact may be cheaper to build than current POTWs on line which are designed to meet the current regulations.

Amending the secondary treatment regulations for POTWs is also required to comply with section 304(d)(1), which states that "from time to time," the EPA shall publish information on the degree of effluent reduction attainable through the application of "secondary treatment." The

regulations have not changed since 1984,[7] and it is about "time" that the EPA take a hard look at technologies that could increase the degree of effluent treatment attainable through "secondary treatment."

II. FACTUAL BASIS FOR PETITION

The main deficiency of the current BOD regulations is that they only address the oxygen depleting water pollution caused by C-BOD (carbonaceous organic waste in raw sewage, comprised mostly of fecal waste), and they ignore oxygen depleting water pollution caused by N-BOD (nitrogenous water pollution sources and their end products, nitrates, comprised mostly of urine and protein wastes). Also, the current regulations only account for interim 5-day BOD values, and not the ultimate values. By implementing the proposed amendments, new and renovated POTWs can achieve much better results for N-BOD and C-BOD reduction, at a cost that is no more or below the cost of designing POTWs to meet the current regulations.

A. Historical Background of Secondary Treatment

The Clean Water Act established as its main goal to eliminate all water pollution by 1985. The Act authorized the EPA administrator to establish a national regulatory program, and in order to achieve the goals of the CWA this program had to be based on best practicable treatment technology for POTWs and should demand at least "secondary treatment."

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[7]. Taking into account when those revisions were begun, it has been over 10 years.

Prior to this legislation, secondary treatment was defined by treatment process types that followed primary treatment, i.e., activated sludge, trickling filters, etc., and was not defined by effluent standards. To satisfy the requirements of the act, the EPA changed the definition of "secondary treatment" from a process type definition to an effluent standard definition, after the EPA established that the effluent of existing "secondary treatment" facilities could achieve an effluent containing less than 30 mg/l of BOD5 (Biochemical Oxygen Demand test after 5 days) and SS (Suspended Solids). Since BOD5 test values on raw sewage influent are generally assumed to be 200 mg/l,[8] it was concluded that the required effluent standard of 30 mg/l represented 85% treatment, an acceptable first step toward the ultimate goal of elimination of all water pollution, or 100% treatment.

Although biological oxidation of nitrogenous materials causes errors in the standard BOD5 test (often referred to as "nitrification interference"), and has been recognized in the technical literature for at least 50 years,[9] it was ignored when EPA established effluent standards for secondary treatment in

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[8]. 48 Fed. Reg. 52,275 (1983); American Society of Civil Engineers and the Water Pollution Control Federation Manual of Practice No.8- Wastewater Treatment Plant Design, 1977 (WPCF Manual), p.14.

[9]. See WPCF Manual at 14; see also Appendix II, "Inhibition of Nitrogenous BOD and Treatment Plant Performance Evaluation," Journal of the Water Pollution Control Federation (Journal WPCF), Vol. 53, # 12, December 1981, p.1.

1973.[10] As a result, secondary treatment facilities often could not meet their NPDES permit requirements, so EPA amended its secondary treatment requirements in 1984 by adding section 133.102(a)(4).[11] This section provides that at the option of the NPDES permitting authority, the original 30 mg/l BOD5 effluent limit may be substituted with the lower 25 mg/l C-BOD5 effluent limit. Using the C-BOD5 alone solves the problem of nitrification interference, but as explained below, it allows a large portion of the BOD pollution in the waste stream to avoiding detection.

B. Deficiencies Caused by Incorrect BOD Testing

There are two main problems caused by BOD5 and C-BOD5 testing methods mandated by the current regulations: 1) they lead to ignoring N-BOD waste, often a substantial portion of the waste stream; and 2) they only represent a five-day value, and not the ultimate value.

1. Current BOD Testing Ignores N-BOD

The main problem with the BOD5 test is that it does not reveal how much of what pollutant (N-BOD or C-BOD) is present in the waste stream. Although the BOD5 test was

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[10]. See Appendix VII, "Letter to the Editor from BOD Task Group (James C. Young, Iowa State University; Gerald N. McDermott, The Proctor & Gamble Company; and David Jenkins, University of California, Berkeley)," appearing in Journal WPCF, Vol. 54, #7, 1982.

[11]. 48 Fed. Reg. 52,259-60 (1983).

originally used to measure C-BOD in order to avoid interference from nitrification as well as to save time, it was intended to be used in combination with the TKN (Total Kjeldahl Nitrogen) test, which is used to measure N-BOD. However, it became common engineering practice to use the BOD5 test by itself.

Many professionals erroneously believed that its value represented the whole amount of oxygen required to stabilize organic matter in raw sewage. The attached description of the BOD test[12] explains that the BOD5 test value is deficient in two respects: one, it does not indicate whether the BOD is carbonaceous or nitrogenous; and two, it only represents the BOD value at five days, rather than the ultimate value. By evaluating only BOD5 test data, the EPA in fact addressed only 41% of the BOD pollution in raw sewage.[13] The anticipated 85% treatment consequently results in only a 35% treatment requirement (85% of 41%), which is clearly inadequate to meet any of the final or interim goals of the CWA.

The 1984 regulation changes which allowed the substitution of the C-BOD5 test is also faulty. It was

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[12]. Appendix I: "BOD Test," Peter Maier, 1993.

[13]. See Appendix I, page 2, figure 1. Point A in that graph represents the BOD5 value assumed to be the C-BOD5 value by current regulations (200 mg/l). Point B represents the actual ultimate total BOD pollution value, or 485 mg/l. Since 200 is 41% of 485, EPA only addresses 41% of the total BOD pollution present in the waste stream.

estimated that 60% of the facilities violating the NPDES permit prior to 1984[14] got into compliance with the new C-BOD5 requirement by simply adding a chemical such as allythiourea. This process selectively kills autotrophic organisms in the test sample, which results in a lower BOD5 reading in the sample, but masks the N-BOD pollution still present in the waste stream. Also, it is questionable if such facilities would have met the 85% treatment requirement of even the C-BOD, which should be based on the C-BOD5 test value of the raw sewage influent entering the facility (but which was never required to be tested).

EPA justified the regulation change based on the test results of effluents only, and assumed that the nitrification interference of the BOD5 test was caused by autotrophic organisms growing in under-loaded sewage treatment facilities. However, recent testing shows that this assumption is not correct in many cases.

For instance, testing in Salt Lake City indicates that the nitrification interference in the BOD5 test on raw sewage influent, as well as on the effluent, is caused by autotrophic organisms originating from the sewer system, and not from the "under-loaded" treatment facility, since nitrification (TKN reduction) does not occur in the facility itself.[15] As a result,

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[14]. See Appendix VI, "Nitrification in BOD5 Test Increases POTW Non-Compliance," Journal WPCF, Vol. 55, #12, December 1983, p.1

[15]. See Appendix III, "1984 Salt Lake City Water Reclamation Facility Test Results," especially table of test results on last page, comparing the TKN and

the facility receives much lower amounts of C-BOD than it was designed to treat, and instead receives N-BOD waste it is not able to handle.

C-BOD5 tests on raw sewage in Chicago and San Diego also indicate that nitrification interference should be anticipated for all BOD5 testing.[16] Carbonaceous and nitrogenous biochemical oxygen demands must be considered separately. To do otherwise leads to technical data that is both meaningless and misleading, and can lead to the incorrect design of sewage treatment facilities.

Ammonia (NH3-N) values of influent and effluent. Because there is no significant change in the TKN value, and because the ammonia values actually increased, this indicates that no nitrification is occurring in the plant itself.

[16]. See Appendix IV- "Exertion of 5-Day Nitrogenous Oxygen Demand in Nitrifying Wastewaters," Journal WPCF Vol. 55, #9, Sept. 1983 (Chicago Results) and Appendix V- "San Diego Test Results on Raw Sewage, 1992." The Chicago data, Appendix IV, table III, shows N-BOD5 percentages of raw influent to be 24%, 28%, and 48% in three different plants. The San Diego data, Appendix V, shows an average N-BOD5 component in raw influent to be 15%, 12%, 16% and 20%. The maximums on a daily basis were as high as 57% N-BOD5 in raw influent.

2. Current BOD Testing Only Represents the 5-Day Value, Not the Ultimate Value

Not only must N-BOD and C-BOD be measured separately in order to accurately assess the makeup of a waste stream, but those values must be measured and quantified to reflect their ultimate value when the waste has fully stabilized in the waterway. The current C-BOD5 and BOD5 tests are faulty because they only represent the 5-day value, not the ultimate value.

This fact was recognized by EPA during the formulation of the 1984 revisions, although the regulations failed to implement the formula needed to adjust for the problem.[17] As explained below, there is no need to increase the time of the test- a simple formula extrapolates the ultimate value from the 5-day values.

C. Required Formula for Accurate Testing of BOD Values

In order to reflect the true measure of both the N-BOD and C-BOD components of BOD pollution, as well as to reflect the ultimate C-BOD and N-BOD values (not just the 5-day interim value), the following formula must be used:

$$BOD = 1.5\ C\text{-}BOD5 + 4.6\ TKN$$

In this formula, the C-BOD5 value is multiplied by 1.5 to

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[17]. 48 Fed. Reg. 52,274 (1983) (section II.A.).

give the ultimate C-BOD value.[18] The ultimate N-BOD value is determined by multiplying the TKN test value by 4.6.[19] Testing for these separate components and using this formula yields the true ultimate makeup of the BOD, and eliminates problems related to nitrification interference (without ignoring N-BOD).

D. Best Practicable Waste Treatment Technology

It is the function of the secondary treatment regulations to define the best practicable waste treatment technology. This petition shows that waste treatment technology exists to build POTWs which cost no more or less than plants designed to meet current regulations, yet which reduce pollution to a much greater extent than those same plants designed to meet the current regulations.

Sewage is basically water carrying solids, and in order to treat sewage (remove solids), it is essential to know not only the composition of these solids, but even more importantly the physical condition of these solids (settleable, non-settleable, colloidal, or molecular dissolved). These conditions change with detention time and as sewage is transported from the source to the sewage treatment facility. Primary treatment mainly removes the settleable solids, while the non-settleable and dissolved solids only can be removed after they are adsorbed to a medium that can be removed by settling. Secondary treatment, historically defined as biological treatment, is using biomass (a medium of living organisms) to adsorb or directly utilize the non-settleable and

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[18]. Id.

[19]. Id.

dissolved solids in sewage, which in turn can be removed by settling processes.

This adsorption (or direct utilization) process can be achieved in fixed medium systems (trickling filters or bio-disks), or in suspended grown treatment systems (activated sludge, oxidation ditches). They all are called "secondary treatment," but their efficiency in removing the solids in the sewage are quite different, and mainly depend on the biomass that can be maintained in such systems. All biological treatment processes (removal of C-BOD, N-BOD, TKN, nitrates, phosphates) can be achieved as long as a suitable biomass can be contained in a controlled environment.

Oxidation ditches can provide such an environment, and the use of oxidation ditches results in excellent treatment of all the conventional water pollution elements in the waste stream.[20] These treatment results are contributed to the biomass contained in the system capable of adsorbing (or directly utilizing) all the above-mentioned water pollution elements from sewage.

Similar excellent treatment results (TKN, nitrate and phosphorous reduction) can be achieved in other containment systems. Not only in expensive multi-unit systems, but also

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[20]. See Appendix IX, "Evaluation of Oxidation Ditches for Nutrient Removal," EPA 832-R-92-003, Sept. 1992; see also Appendix X, "A Comparison of Oxidation Ditch Plants to Competing Processes for Secondary and Advanced Treatment of Municipal Wastes," EPA 600/2-78-1051, March 1978.

in inexpensive Sequencing Batch Reactor (SBR) systems.[21]

Since these results are achieved in a containment system without primary treatment and without expensive sludge stabilization, it is not surprising that the initial construction and annual operating costs of oxidation ditches and SBRs are lower compared with complicated "conventional" systems which are only capable of adsorbing C-BOD, and which are unable of adsorbing or utilizing other water pollution elements in sewage such as N-BOD, nitrates and phosphates.[22]

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[21]. See Appendix VIII, "Biological Phosphorous Removal in a Fed-Batch Reactor Without Anoxic Mixing Sequences," Research Journal WPCF, Vol. 63, #3, May/June 1991. This paper shows that the following effluent standards can be achieved using a SBR: less than 10 mg/l C-BOD; 10 mg/l TSS; 0.2 mg/l ammonia nitrogen; 5 mg/l total nitrogen; and 1 mg/l phosphorous.

See also Appendix XI- "EPA Summary Report on Sequencing Batch Reactors," EPA/625/8-86/011, August 1986, esp. pp. 9-13.

[22]. See Appendix XI pp. 16-22: these charts show the results of EPA's estimated costs for constructing SBRs of various sizes (1986). EPA's ultimate conclusion was that SBR and oxidation ditch systems can be built and operated at lower costs than conventional systems.

E. Proposed Testing and Effluent Limitation Amendments

The petitioners recognize that it might not be economically feasible to apply the proposed regulations to existing POTWs, since many would be out of compliance and would need to make major renovations. Therefore, the petitioners propose that a new section be added to 40 C.F.R. Part 133 which would require *testing* of the below parameters for all existing and future POTWs,[23] but which would only apply as NPDES *effluent limitations* for those POTWs yet to be built or renovated. Based on the EPA reports and other technical papers cited in this petition, as well as numerous other technical papers regarding secondary treatment and nutrient removal, the following effluent standards are proposed. The technical literature supports that these proposed effluent limitations are easily attainable by utilizing the proper biomass in a suitable containment facility, such as oxidation ditches and SBRs (as well as any other systems that EPA may wish to explore).

PROPOSED EFFLUENT LIMITATIONS:

C-BOD5	<	15 mg/l
TKN	<	5 mg/l
NH3-N	<	1 mg/l
NO3-N	<	5 mg/l
Total P	<	2 mg/l

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[23]. Testing on existing POTWs is necessary in order to evaluate treatment plant performance, since it is essential that proper technical data be available to determine future needs.

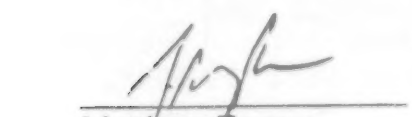
All measured as 7-day averages.

CONCLUSION:

Treatment technologies are available to treat wastes more completely than the technologies which are now being employed to meet the current regulations, and at an equal or lesser cost. This being so, EPA has an obligation under the CWA to amend the secondary treatment standards to reflect this best practicable waste treatment technology.

The actual pollution components in the waste stream can only be identified by using correct testing procedures, as proposed in this petition. Correct testing of these parameters is the only way to ensure that the design of future POTWs will result in the treatment of all components of the waste stream, and to ensure that future expenditures of public funds will efficiently contribute to the interim 85% treatment goal of the CWA, as well as the ultimate goal of eliminating the discharge of pollutants into the Nation's waters.

SUBMITTED this Sixth Day of August, 1993.



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APPENDIX C - EPA RESPONSE TO PETITION FOR RULEMAKING, DATED AUGUST 6, 1993

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 6, 1995

OFFICE OF WATER

Mr. Matthew Kenna
1310 Meadow Road
Durango, Colorado 81301

Dear Mr. Kenna:

By this letter, the United States Environmental Protection Agency ("EPA" or "the Agency") is denying the petition for rulemaking ("Petition") you submitted on August 6, 1993, on behalf of Peter Maier, P.E., the Intermountain Water Alliance, the Utah Chapter of the Sierra Club, the Southern Utah Wilderness Alliance, the Western Colorado Congress, the Stone Fly Society Chapter of Trout Unlimited and the Federation of Fly Fishers, and the Utah Wilderness Society. The Petition requests that EPA amend the secondary treatment regulations applicable to publicly owned treatment works ("POTWs"). The Petition seeks to impose additional affluent limitations on new POTWs based on what EPA currently considers to be advanced or tertiary treatment.

The Petition requests that EPA amend the secondary treatment regulations to create more stringent controls on carbonaceous biochemical oxygen demand, total nitrogen, nitrogen compounds, and phosphates. By so doing, the Petition asks EPA to amend the Agency's interpretation of the statutory term "secondary treatment" to the extent that interpretation does not require limitations on nitrogen, nitrogen compounds and other nutrients in POTW effluent. The Petition seeks to impose the monitoring for all POTWs for the pollutants identified in the Petition, but requests limitations only on new POTWs. Finally, the Petition also requests public hearings, especially to hear the views of those who might oppose any new regulations proposed in the Petition.

At the outset, I note that the technology-based secondary treatment regulations play an important role in protecting the quality of the nation's waters. These regulations, together with the Construction Grants and State Revolving Fund Programs, have drastically improved the sewage collection and wastewater treatment plant infrastructure in the United States over the past two decades. Recently, EPA conducted a review of the environmental benefits of the secondary treatment regulations. National Environmental Benefits of the Clean Water Act: Progress Made In the United States Through the Secondary Treatment of Municipal Wastewater, August 1993, EPA 842-K-93-001 (copy enclosed). The study concluded that "significant

progress has been made in improving water quality and other environmental resources through the secondary (and advanced) treatment of municipal wastewater." Id. at 1. The study reported dramatic improvements in the level of biochemical oxygen demand in the effluent of POTWs during the past 20 years. For example, the study found that between 1970 and 1988 discharges of 5-day biochemical oxygen demand from POTWs declined by 36%, even though the population served by these facilities increased by 80%. (Id. at 1). The study also found dramatic improvements in the levels of dissolved oxygen in many waterbodies receiving effluent from these facilities.

Although the technology-based secondary treatment regulations achieved significant reductions in additions of pollutants to the nation's waters, those regulations are but one tool available for this purpose. Where limits based on secondary treatment are insufficient to protect the quality of a waterbody, POTWs are required to meet many more stringent water quality-based limits. Secondary treatment standards were never intended to serve as the sole protection against degraded or contaminated waters due to discharges by POTWs. The secondary treatment standards establish technology-based limits that (with some statutory exceptions) serve as a minimum level of control for all POTWs and are supplemented by limitations based on State water quality standards when local conditions warrant more stringent controls.

EPA is denying the Petition because existing water quality-based permit regulations address water quality impairments associated with nitrogen, nitrogen compounds, and phosphates, which the Petition alleges require remedy. In addition, there may be some POTWs where imposition of the permit conditions requested in the Petition would be unnecessary (i.e., require unnecessary monitoring). The concerns expressed in the Petition were first presented to EPA in comments on an Agency rulemaking in 1984 and again several times since then. In the course of the 1984 rulemaking, EPA responded to those concerns and your 1993 Petition does not present any new information to refute the Agency's 1984 response. To the extent you have information indicating that particular POTWs are causing water quality problems due to a lack of nitrogen controls, we trust that you and/or your clients will contact the applicable NPDES permit issuance authority. Water quality-based limits may be appropriate for such facilities. The basis for the Agency's decision is set forth in more detail in the enclosed "Decision on Petition for Rulemaking re: Secondary Treatment" (Decision).

As you are aware, the issues you raise have already received considerable attention from EPA during the past decade and more, in the context of a notice-and-comment rulemaking and otherwise. In light of that fact, and the discussion in the enclosed Decision, we do not believe that the "full notice and comment opportunities" you suggest, Petition at

2, would be an appropriate use of Agency resources. Similarly, we do not believe public hearings would be appropriate at this time.

Finally, we note your statement that "in the event this petition is denied, petitioners intend to seek review of the denial in Federal Court under CWA section 509(b)." Petition at 2. As you are aware, the burden you would carry in any such litigation would be considerable. See American Horse Protection Association, Inc. v. Lyng, 812 F.2d 1, 4-8 (D.C. Cir. 1987). We hope you will contact us before proceeding with any litigation relating to the denial of the Petition. We strongly believe such litigation would not only be unsuccessful, but would drain resources from our shared goal of protecting the quality of the nation's waters.

Sincerely,

Robert Perciasepe
Assistant
Administrator

Enclosures

National Environmental Benefits of the Clean Water Act: Progress Made In the United States Through the Secondary Treatment of Municipal Wastewater, August, 1993, EPA 842-K-93-001
"Decision on Petition for Rulemaking re: Secondary Treatment"

Decision on Petition for Rulemaking re: Secondary Treatment

The Petition for rulemaking to amend secondary treatment regulations submitted by Matthew Kenna on August 6, 1993 on behalf of Peter Maier, P.E., the Intermountain Water Alliance, the Utah Chapter of the Sierra Club, the Southern Utah Wilderness Alliance, the Western Colorado Congress, the Stone Fly Society Chapter of Trout Unlimited and the Federation of Fly Fishers, and the Utah Wilderness society (collectively "Petitioners"), is HEREBY DENIED for the reasons set forth below.

Background - Effluent Standards Applicable to POTWs under the Act

The Clean Water Act, 33 U.S.C. Sec. 1251 et seq., is a comprehensive statute designed "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" through reduction and eventual elimination of the discharge of pollutants into those waters. Section 101(a), 33 U.S.C. Sec. 1251(a). As the primary means toward achieving this goal, Congress prohibited the discharge of any pollutant unless that discharge complies with the requirements of the Act. Section 301(a), 33 U.S.C. Sec. 1311(a). Such compliance may be achieved by obtaining a permit pursuant to Section 402 of the Act, which established the NPDES permit program. 33 U.S.C. Sec. 1342. NPDES permits incorporate technology-based controls (i.e., control of wastewater discharges)

which can be achieved using various levels of pollution control technology. The Act also directs the States to establish water quality-based standards. NPDES permits must incorporate permit conditions to assure compliance with these water quality standards. 33 U.S.C. Sec. 1311(b)(1)(C).

For a publicly owned treatment works (POTW), CWA section 301(b)(1)(B) specifies the applicable technology-based control standard as "secondary treatment," as defined by the Administrator. 33 U.S.C. Sec. 1311(b)(1)(B). Unlike special limitations applicable to "New source" industrial dischargers, secondary treatment regulations are universally applicable to all POTWs, whether existing or new. Section 304(d) provides that the Administrator is to publish "information on the degree of effluent reduction attainable through the application of secondary treatment." 33 U.S.C. Sec. 1314(d)(1). Secondary treatment is not otherwise defined in the Act, though legislative history from 1972 does indicate secondary treatment (1) involves a range of removals of suspended solids and BOD,[1] (2) secondary

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[1] "Secondary treatment as considered in the context of a [POTW] is generally concerned with suspended solids and biologically degradable, oxygen demanding material." H. Rep. 92-111, 92d Cong., 2d Sess. 101, 1 Legislative History of the Water Pollution control Act Amendments of 1972 ("Legis. Hist.") 788.

treatment involves removal efficiencies between 50% and 90%,[2] and (3) the definition of secondary treatment is to be technology-based rather than water quality based.[3] Finally, POTWs are required to meet any more stringent limitation established pursuant to state law or regulation, including those necessary to meet state water quality standards. 33 U.S.C. Sec. 1311(b)(1)(C).

Secondary treatment represents the initial technology-based level of effluent reduction specified by Congress for POTWs. The requirement that POTWs attain secondary treatment under CWA section 301(b)(1)(B), therefore, is similar to the requirement that industrial dischargers attain effluent reductions representing application of the "best practicable control technology currently available (BPT)" under CWA section (301(b)(2)(A). As the Act was written in 1972, Congress required

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[2] "In primary treatment of sewage, between 30 percent and 50 percent of organic pollution is removed. With secondary treatment between 50% and 90% is removed." S. Rep. 92-414, 92d Cong., 1st Sess. 6, 2 Legis. Hist. 1424.

[3] "The application of Phase I technology to industrial point sources is based on the control technologies for those sources and to [POTWs] is based on secondary treatment. It is not based upon ambient water quality considerations." S. Rep. 92-414, 92d Cong., 1st Sess. 43, 2 Legis. Hist. 1461.

additional, higher levels of technology-based effluent reduction -- "best available technology economically achievable" for industrial dischargers pursuant to section 301(b)(2)(A) and "best practicable waste treatment technology" (BPWTT) pursuant to section 301(b)(2)(B) for POTWs.[4]

In the Municipal Wastewater Treatment Construction Grants Amendments of 1981, Congress repealed the requirement of section 301(b)(2)(B) that all POTWs meet the higher level of technology-based requirements, BPWTT.[5]

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[4] Section 301(b)(2)(B) provided that, by July 1, 1983, POTWs were required to meet the requirements of section 201(g)(2)(A). 33 U.S.C. Sec. 1311(b)(2)(B). Section 201(g)(92)(A), in turn describes the effluent reduction standard of BPWTT. 33 U.S.C. Sec. 1281(g)(2)(A). Pursuant to section 201(g)(2)(A), applicants for construction grants are required to demonstrate the POTW will provide for the application of BPWTT over the life of the POTW. Id.

[5] Section 201(g)(2)(A) which specifies BPWTT for grant applicants, however, was not similarly repealed. The 1981 amendments also amended CWA section 304 to specify that certain biological treatment facilities, such as oxidation ponds, lagoons, and ditches and trickling filters, are deemed the equivalent of secondary treatment under CWA section 304(d)(4). 33 U.S.C. Sec. 1314(d)(4). Under that section, EPA was to provide

See Municipal Wastewater Treatment Construction Grants Amendments of 1981, Pub. L. No. 97-117, Sec. 21(b), 95 Stat. 1623, 1632 (1981). The legislative history indicates Congressional concern with the effect of fiscal constraints on municipalities attempting to attain secondary treatment on POTWs, as well as difficulties encountered through federal funding mechanisms:

> The 1972 Act originally required municipal plants to comply with effluent limitations based on secondary treatment by 1977. This deadline proved to be difficult, and in many cases impossible to meet, largely because of insufficient Federal funding. The 1977 amendments, therefore, permitted extension of the deadline to municipalities acting on good faith which were unable to meet this requirement. Such extensions were to be in no case later than July 1, 1983.
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> With the projected shortfall in Federal expenditures, and the reduced Federal share for the

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guittance on design criteria for such facilities taking into account pollutant removal efficiencies and assuring that water quality will not be adversely affected by deeming such facilities to be the equivalent of secondary treatment. EPA did provide such guidance. 48 Fed. Reg. 52258 (Nov. 16, 1983)(proposed); 49 Fed. Reg. 36986 (Sept. 20, 1984)(final).

> construction grant program, it is once more apparent that many communities will be unable to meet the 1983 deadline. This legislation thus extends the deadline to 1988 for communities which cannot meet earlier deadlines because Federal funds are not available. The Committee emphasizes that the same good faith requirements now in existing law are also extended to facilities seeking the new extension.
>
> *For the same reasons, this section also amends section 301(b)(2) to remove the 1983 deadline for achievement of best practical waste treatment technology standards for municipalities. No new deadline is substituted.*

S. Rep. 970204, Sec. 19, p.17 (1981)(emphasis added).

Technology-Based Regulations Applicable to POTWs

EPA first promulgated secondary treatment regulations in 1973, and later revised those regulations in 1976, 1977, 1984, and 1985.[6] Currently, the regulations

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[6] 38 Fed. Reg. 22298 (Aug. 17, 1973)(initial regulations); 41 Fed. Reg. 30786 (July 26, 1976)(deleting limitation on fecal coliforms and limiting applicability of pH limitation); 42 Fed. Reg. 54664 (Oct. 7,1977)(allowing upward

require POTWs to meet certain "end-of-the-pipe" limitations for biochemical oxygen demand (as measured over a 5 day period)("BOD_5")[7] and total suspended solids, on both a monthly and weekly basis. The regulations also generally require POTWs to remove 85 percent (on a monthly basis) of BOD_5 and total suspended solids and to maintain an effluent pH between 6.0 and 9.0. 40 CFR 133.102. Chemical oxygen demand (COD) or total organic carbon (TOC) may be substituted for BOD_5 when a long-term BOD:COD or BOD:TOC correlation has been established. 40 CFR 133.104.

When EPA first promulgated the secondary treatment regulations in 1973, the "degree of effluent reduction attainable by secondary treatment" was expressed in terms of biochemical oxygen demand, suspended solids, fecal coliform bacteria, and pH.[8] Similar to the

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adjustment of suspended solids limitation for certain POTWs); 49 Fed. Reg. 36986 (Sept. 20, 1984)(allowing substitution of $CBOD_5$ test for BOD_5 test); 50 Fed. Reg. 23383 (June 3, 1985)(modifying percent removal requirement).

[7] BOD_5 may be substituted with $CBOD_5$ under certain circumstances in the discretion of the permitting authority. 40 CFR 133.102(a)(4).

[8] As noted previously, the 1976 rulemaking deleted the fecal coliform limitation and limited the applicability of the pH limitation. Supra note 7.

applicable standard setting criteria for industrial dischargers, BPT, secondary treatment was based on the capabilities of existing secondary treatment processes. 38 Fed. Reg. 22298 (Aug. 17, 1973). Historically, treatment processes were grouped together as "primary" or "secondary" based on the pollutants removed and the means by which pollutant removal was accomplished. 40 Fed. Reg. 34522 (Aug. 15,. 1975). Primary treatment removes pollutants through liquid-solid separation techniques. Secondary treatment reduces pollutants not effectively removed by primary treatment. Secondary treatment processes were developed to biologically remove degradable organic materials from wastewater. Secondary treatment, therefore, became synonymous with the biological treatment of wastewater for the removal of carbonaceous organic material. Id. "Nutrients," such as phosphorous and nitrates (NH_3), were not specified for inclusion as pollutant parameters to be regulated under secondary treatment because, under normal conditions, secondary treatment does not effectively or consistently remove them. 48 Fed. Reg. 52272, 52273 (Nov. 16, 1983).

In addition to the secondary treatment regulations, EPA did publish a BPWTT guidance document in 1975 captioned "Alternative Waste Management Techniques for Best Practicable Waste Treatment," (EPA-430/9-75-013, Oct. 1975). Pursuant to section 304(d)(2), that document was intended to provide information to grant applicants about practicable waste

treatment techniques available to implement section 201(g)(2)A). Current EPA grant regulations at 40 CFR 35.2030(b)(2) require that applicants include a description of the BPWTT, which in turn is defined at 35.2005(b)(7). BPWTT is defined as the cost-effective technology that can treat wastewater to meet, in relevant part, the secondary treatment provisions of 40 CFR Part 133 and any more stringent water quality standards pursuant to 40 CFR 122.44(d). 40 CFR 35.2005(b)(7)(i)&(iii).

Petition for Rulemaking

the Petition requests that EPA amend its interpretation of the statutory term "secondary treatment," as well as amend the secondary treatment regulations to require that POTWs achieve certain additional effluent limitations (on a weekly basis) for $CBOD_5$, total Kjeldahl nitrogen ("TKN"), ammonia nitrogen ("NH_3-n"),nitrate ("NO_3-N"), and total phosphorous. The Petition cites technical and legal bases in support of the regulatory amendments proposed. On technical grounds, the Petition asserts that the existing secondary treatment limitations to control BOD are inadequate because, although accounting for carbonaceous oxygen demand, the regulations do not control nitrogenous oxygen demand ("NOD") -- it explains why the BOD_5 and $CBOD_5$ parameters fail to reflect the impact of nitrogenous oxygen demand instream. Petition at 4. The Petition presumes, therefore, that stream impairments due to low dissolved oxygen ("DO") as a result of POTW discharges are

not adequately addressed and require technology-based effluent limitations. The Petition presents "new" information to establish the relationship between BOD, CBOD, and NOD, and implies that the nature of this relationship necessitates regulatory change. Finally, the Petition offers information about cost-effective technologies available to achieve the effluent limitations sought in the Petition.

As legal support, the Petition argues that the proposed regulatory amends are compelled by the Clean Water Act. The Petition claims that specific provisions of the Act require EPA to amend the secondary treatment regulations "whenever it appears that better technology exists to treat waste better than that which is being utilized to meet current regulations." Petition at 3. The Petition cites to section 304(d)(2) asserting a requirement that EPA amend the secondary treatment regulations to require that they reflect the "best practicable waste treatment technologies." Id. The Petition also maintains that the existing regulations violate section 304(d)(4). Id. Finally the Petition cites to section 304(d)(1) and notes that "it is about time" to amend the secondary treatment regulations because the Agency has not done so since 1985. Petition at 4.

Response - Technical Bases for Petition

Adequacy of NOD Controls

For roughly two decades, EPA has construed the term "secondary treatment" in the Clean Water Act to refer to the biological treatment of carbonaceous organic materials. As noted above, as early as 1975, EPA relied on legislative history or its conclusion that secondary treatment processes were developed to biologically remove degradable organic materials from wastewater. The term "secondary treatment" has become synonymous with the biological treatment of wastewater to remove carbonaceous organic materials. Since that time, Congress has twice amended the Act, once in 1977 and again in 1981. In 1981, Congress specifically repealed the requirement that POTWs meet technology-based effluent limitations more stringent than secondary treatment. That action alone, in light of the contemporaneous understanding of the term "secondary treatment," suggests reinterpretation of the term at this time is unwarranted.

Notwithstanding the long-standing interpretation of the term "secondary treatment," which refers to processes to remove carbonaceous biological oxygen demanding materials, the Petition fails to provide a basis for further tightening of the secondary treatment regulations to impose limitations on nitrogen, nitrogen compounds and other nutrients. EPA recognizes the relationship between BOD, CBOD, and NOD, and, in a 1984 rulemaking, responded to the technical concerns

identified in the Petition. At that time, the Agency's rationale was subject to judicial challenge under CWA section 509. 33 U.S.C. Sec. 1369.

In the 1984 rulemaking, EPA amended the secondary treatment regulations to allow POTWs to conduct compliance monitoring based on a nitrogen-inhibited BOD_5 test, also called 5-day carbonaceous biochemical oxygen demand or $CBOD_5$ test. The $CBOD_5$ test inhibits nitrification by blocking the conversion of ammonia to nitrate, without affecting the activity of the carbonaceous organisms. In the 1984 rulemaking, EPA recognized the effect of nitrifying bacteria and NOD on BOD_5 test results, and thus, the effect of nitrification on determinations about POTW compliance with the secondary treatment regulations:

> While the oxygen demand for the BOD_5 parameter is primarily exerted through the metabolism of organic matter by carbonaceous bacteria (resulting in a carbonaceous biochemical oxygen demand or CBOD), although an additional nitrogenous oxygen demand (NOD) may also be exerted through action of nitrogenous bacterial that oxidize ammonia nitrogen to nitrate in a two-stage process known as nitrification.

48 Fed. Reg. 52273, 52272 (Nov. 16, 1983).

Problems had arisen with the use of the BOD_5 test in many newer municipal

secondary treatment facilities because, when sufficient numbers of nitrifying bacteria are present in the test sample, they can exert a significant NOD in the BOD_5 test that would not be exerted in their absence. Id. Because many of the factors conducive to improved secondary effluent quality are also conducive to the growth of nitrifying bacteria, the BOD_5 test erroneously might have indicated poorer effluent quality when, in fact, effluent quality and plant performance had improved. EPA learned that some POTWs were being intentionally operated in a mode that inhibits the growth of nitrifying bacteria in order to improve BOD_5 test results. As a result, such facilities would discharge effluent of poorer quality (although the BOD_5 test results indicated the opposite) and produce greater quantities of sludge and have higher operation and maintenance costs.[9] Id.

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[9] Even with this correction, EPA noted that, in some instances, substitution of the $CBOD_5$ test for the BOD_5 test might be inappropriate, specifically, where populations of nitrifying bacteria are presumed to be low. Even though nitrifying populations may be decreased in a fully loaded secondary treatment plant, compared to an underloaded facility, some populations of nitrifying bacterial may still exist, thus exerting a small NOD in the test sample. 48 Fed. Reg. at 52277. Consequently, the regulations provided that, with certain regulatory restrictions, the permit issuance authority may substitute the parameter

In the 1984 rulemaking, one of the persons represented in the Petition, Mr. Maier,. presented the concerns raised again in the Petition. The primary comments opposed to the $CBOD_5$ substitution argued that the nitrification inhibitor, 2-chloro-6 trichloromethyl pridine (TCMP), significantly affected the carbonaceous oxidation reaction during the 5-day test period. 49 Fed. Reg. 36986, 36998 (Sept. 20, 1984). Another commenter expressed concern about TCMP not inhibiting the conversion of nitrite to nitrate. Id. EPA responded to those concerns in the course of the rulemaking.[10]

Of particular relevance to the instant Petition, EPA received comments suggesting the secondary treatment regulations should be amended to include limitations for NOD. EPA recognized that NOD accounted for the majority of oxygen demand remaining in the effluent once secondary treatment was achieved. 49 Fed. Reg. at 36999. EPA also recognized that ammonia in wastewater may potentially exert significant NOD, but noted that NOD in the receiving waters

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$CBOD_5$ for the parameter BOD_5 on a case-by-case basis only where data are available to establish such $CBOD_5$ limitations. 40 CFR 133.105(e).

[10] Like the responses to Mr. Maier's comments, EPA's responses to these comments were subject to judicial review pursuant to CWA section 509. 33 U.S.C. Sec. 1369.

depends on the characteristics of those waters as well as the ammonia concentration of the effluent. Many waters under certain temperature, flow, and other conditions exhibit low NOD (e.g., nitrification). Some waters exhibit little or no NOD under all conditions. Therefore, as the Agency explained, the determination that NOD reduction is required should be determined on a case-by-case basis for each receiving water segment and should not be applied across-the-board.[11] Id.

The principle of nitrification interference does not conclusively establish a need to amend the secondary treatment requirements. Amendments to the regulations might be warranted if NOD from POTWs posed a significant threat to waters of the United States. All POTWs, however, are also required to meet any more stringent effluent limitations necessary to meet state water quality standards pursuant to section 301(b)(1)(C).

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[11] The Petition overstates the applicability of the $CBOD_5$ test. As mentioned above, with certain regulatory restrictions for the NPDES permit authority may substitute the parameter $CBOD_5$ for the parameter BOD_5 on a case-by-case basis where data are available to establish such $CBOD_5$ limitations. 40 CFR 133.105(e). Thus, interested persons may challenge any such substitution in the course of permit issuance proceedings.

EPA and States approved to administer the NPDES program routinely do impose water quality-based limitations as necessary for given receiving waters pursuant to CWA section 301(b)(1)(C). In this regard, we note that almost 53% of the major POTWs in the United States already have limits for nitrogen (2084 out of 3960, according to EPA databases). As such, instream DO concerns due to POTW NOD can be (and have been) addressed on a case-by-case basis.

The Petition does not offer any indication of the inadequacy of water quality-based permitting to address NOD concerns. To the contrary, the Petition does argue that NOD and CBOD must be measured and quantified to reflect their ultimate BOD <u>when the waste is fully stabilized in the waterway</u>. Petition at 7. Where receiving waters are "impaired" due to low levels of dissolved oxygen, permit writer address "ultimate" oxygen demand of effluent by imposing more stringent limitations necessary to assure attainment of water quality standards. That nitrification interference exists does not suggest <u>why</u> technologies to control NOD should be considered "secondary treatment" Any such revised secondary treatment requirements would be universally applicable to all POTWs pursuant to section 301(b)(1)(B), regardless of local variability affecting the BOD/CBOD/NOD relationship at any particular POTW. The correction provided by substitution of the nitrogen-inhibited $CBOD_5$ test, along with water quality-based permitting under 40 CFR 122.44(d) provide adequate controls on POTW NOD, as

facts warrant.

New Information and Cost-Effectiveness

The Petition also argues that new information about nitrification interference and the existence of cost-effective technologies support amendment to the secondary treatment regulations. The Petition also notes this new information provides a basis for judicial review under section 509(b). 33 U.S.C. sec. 1369(b). We find no information that is both new and relevant to a decision to revise the secondary treatment regulations in the manner suggested.

The information presented falls into two categories. First, the Petition provides information about the relationship between total BOD, BOD5, CBOD5, NBOD5, TKN and some related parameters in municipal wastewaters. Appendix I, a 1993 article by Peter Maier, discusses the perceived inadequacies of the BOD5 test, specifically in relationship to BNOD5 and TKN. Appendix II is also cited for an explanation of "nitrification interference." Petition at 5 note 9. Appendix IV, a 1983 article from a professional journal, covers much of the same ground.[12] Other appendices providing information on this subject include Appendices II, III, V and VI.

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[12] We note that this article preceded EPA's 1984 amendments to the secondary treatment regulations.

The Petition attempts to challenge what the Agency assumed in the 1984 rulemaking, which authorized substitution of the $CBOD_5$ test for the BOD_5 test. Petition at 6. The Petition argues that EPA wrongly assumed that autotrophic organisms growing in under-loaded POTWs caused nitrification interference in the BOD_5 test and that EPA justified the regulation change based on test results of effluents only. Id. First, examination of the 1984 rulemaking does not indicate EPA relied on such assumptions about loaded or underloaded POTWs. As noted previously,[13] EPA alluded to loaded/underloaded facilities only in reference to the permit issuance authority's case-by-case determinations about substituting the $CBOD_5$ test for the BOD_5 test. Any assumption based on "effluents only" relates to determining when discretionary substitution of the applicable analytic method is inappropriate; any such assumptions were not necessary to support the underlying regulatory justification to allow the substitution in the first instance. Second, even if EPA made such assumptions, the new information presented does not invalidate EPA decisions about how to account for nitrification in permitting. The timing and degree of nitrification varies based on pH and temperature, among other factors. Nitrification is variable wherever it occurs. If nitrification occurs prior to treatment, then any remaining NOD still could be detected and

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[13] See note 9.

accounted for under the mechanisms of water quality-based permitting.

The information provided in these appendices is neither new nor relevant to a decision to amend the secondary treatment regulations. As a matter of scientific principle, EPA acknowledges the concept of nitrification interference as an element to be accounted for when measuring BOD. EPA was fully aware of the general relationship between the parameters addressed in these appendices when the Agency promulgated the 12984 amendments to the secondary treatment regulations. EPA does not, however, agree as a matter of policy or law that the appropriate regulatory response is to amend and expand the secondary treatment regulations because water quality-based permitting regulations provide adequate mechanisms to address stream impairments due to nitrogen and nitrogen compounds. To require advanced treatment for all POTWs might impose additional treatment (and associated costs) in instances where such treatment is unnecessary. EPA considered and rejected arguments by Mr. Maier (in 1984) that the regulations should be written differently in light of these relationships -- and reaffirms its decision in response to the instant Petition. Additional and more specific data on the subject of nitrification interference simply fail to suggest a basis for changing that earlier decision.

The second category of information provided in the Petition is information concerning the ability of certain technologies, such as oxidation ditches

and sequencing batch reactors, to remove nitrogen and phosphorous from municipal wastewaters. See Appendices VIII, IX, X and XI. This information does not establish (or even suggest) why control of nitrogen or phosphorous should be considered secondary treatment, the technology-based effluent reduction "floor" for POTWs. Though the information suggests that oxidation ditches or SBR systems may be appropriate in particular cases where nitrogen or phosphorous problems are causing water quality impairments, it does not suggest that those technologies should form the basis for nationwide secondary treatment regulations.

As the final technical matter, the Petition argues that the cost-effectiveness of several technologies (oxidation ditches and sequencing batch reactor (SBR) systems) in controlling NOD provides a basis to amend the regulations. There are three problems with this assertion. First, the fact that a technology can achieve cost-effective control of NOD does not, without more, establish that such technologies should be considered to be secondary treatment. Second, EPA believes that technologies such as oxidation ditches and SBR systems are generally cost-effective only for relatively small municipal treatment facilities due to greater land requirements. Finally, under section 201(g)(2)(A), applicants for federal grant monies are already required to use cost-effective technologies. If oxidation ditches or SBR systems are

indeed the most cost-effective technologies, then undoubtedly the market forces will encourage installation of these technologies by POTWs, including incentives created by section 201(g)(2)(A) for any POTWs still receiving federal grant funding under the Clean Water Act.

Response -Legal Bases for Petition

The Petition incorrectly states that section 304(d)(2) requires EPA to amend the secondary treatment regulations "whenever it appears that better technology exists to treat waste better than that which is being utilized to meet current regulations." Petition at 3. Section 304(d)(2) explicitly refers to revision of BPWTT information and not to secondary treatment regulations; section 304(d)(2) refers to secondary treatment. The Petition simply does not assert a basis to "bootstrap" BPWTT technologies onto secondary treatment requirements. "Secondary treatment" and "BPWTT" are two different standards. Given the explicit congressional repeal of a universally applicable BPWTT requirement, EPA is not compelled to expand second treatment requirements (or its interpretation of the term secondary treatment) to incorporate BPWTT-based limitations. Moreover, section 304(d)(2) contains no language suggesting that Congress intended to impose a non-discretionary duty on EPA to revise any regulations promulgated under section 304.

The Petition also fails in the next legal argument -- that section 304(d)(4)

requires amendment of the secondary treatment regulation. Section 304(d)(4) provides that

> . . . such biological treatment facilities as oxidation ponds, lagoons, and ditches and trickling filters shall be deemed the equivalent of secondary treatment. The Administrator shall . . . assur[e] that water quality will not be adversely affected by deeming such facilities as the equivalent of secondary treatment.

33 U.S.C. sec. 1314(d)(4). The Petition argues that "the present regulations do nut assure that water quality is not adversely affected, and must be changed." Petition at 3. This argument misapprehends the statute.

Section 304(d)(4) does not require EPA to promulgate secondary treatment regulations that assure that water quality is not adversely affected. Secondary treatment regulations are technology-based; the authority to establish limitations based on the quality of the receiving watters is found in section 302(b)(1)(C). Section 304(d)(4) creates a very different type of requirement -- that NPDES permitting authorities consider certain types of biological treatment facilities, which might no normally be considered to provide the same levels of control as secondary treatment, to be adequate for purposes of achieving the secondary treatment standards. In partially relaxing the secondary treatment standards, however, Congress did provide

on caveat -- that POTWs could qualify under this provision only of no harm to water quality resulted. Therefore,. Congress tasked EPA with providing guidance on design criteria for such biological treatment facilities (taking into account pollutant removal efficiencies) and assuring that water quality would not be adversely affected by the legislative fiat.

In the 1984 rulemaking, EPA implemented section 304(d)(4) by establishing alternative limits for facilities that use either trickling filters (TFs) or waste stabilization ponds (WSPs) and meet certain other requirements. 49 Fed. Reg. 36986 (Sept. 20, 1984); see 40 CFR 133.105 & 133.101(g). With respect to the requirement that water quality not be adversely affected by these changes, EPA noted that

> The Agency believes that the regulation includes a number of measures which will prevent . . . adverse affects on water quality. These measures include: (1) An "anti-backsliding" provision . . . and (2) development of permit limitations for new TFs and WSPs to assure that such facilities are designed and operated in accordance with current design practice. In addition, the Agency's permit regulations currently require that any effluent limitations established in NPDES permits result in compliance with applicable water quality standards. Thus, no

> adjustment of a TF's or WSP's effluent limitations is allowed where a violation of a water quality standard would result.

49 Fed. Reg. 36992 (Sept. 20, 1984).

Section 304(d)(4) does not announce a general rule that the secondary treatment regulations must protect water quality in all instances, but rather the section provides only that, by relaxing secondary treatment standards for some facilities, EPA is to assure that water quality is not adversely affected. The Agency's regulations currently satisfy this requirement. Therefore, the secondary treatment regulations do not violate section 304(d)(4).

The final legal argument in the Petition, based on section 304(d)(1), also fails to establish that EPA must amend the secondary treatment regulations. Petition at 4. The Petition concludes that, because EPA has not amended the secondary treatment regulations since 1984, "it is about time that the EPA take a hard look at technologies that could increase the degree of effluent treatment attainable through secondary treatment." Id.

Section 304(d)(1) does not require EPA to revise the secondary treatment regulations at this time or any other specific time. Statutory language similar to that used in section 304(d)(1) confers discretionary authority on agencies, but imposes no mandatory duties. See NRDC v. EPA, 770 F.Supp.

1093 (E.D.Va. 1991), aff'd 16 F.3d 1395 (4th Cir. 1993) (interpreting CWA section 304(a)(1)); see also Powers v. United States, 996 F.2d 1121 (11th Cir. 1993); Sierra Club v. Thomas, 828 F.2d 783, 791 (D.C.Cir. 19987) (times when one can conclude that an inferable as opposed to stated deadline imposes a mandatory duty of timeliness will be very rare). Even if section 304(d)(1) were construed to impose a mandatory duty on EPA to publish additional informational on secondary treatment "from time to time," the Agency has fully satisfied that obligation as evidenced by regulatory revisions in 1976, 1977, 1984, and 1985.

END